

MUSEUM OF
VERTEBRATE ZOOLOGY
REPRINT LIBRARY

Digitized by the Internet Archive
in 2017 with funding from
CLIR

<https://archive.org/details/fieldnotesv140800kofo>

Koford, C. B.

catalogue

1800[#] - 1957

1956 - 1957

Barro Colorado

Panama

Journal

C. Koford
1956

Specimen Catalog

July 12 Barro Colorado Island, Gatun Lake, Canal Zone

1800 ♂ *Alouatta palliatus* 483 tot. length; 413 gms.

Imm. Died in captivity. Bought in Panama by Hugh Willmar.

July 18
1801

Snake.

Pickup on Donato Steps. Dead. No head.

July 19
1802

Bufo

Night, in grass, E. end New Lab.

1803 ♀ *Rattus rattus* ~~Spring rat~~, 417-235-34-21; 133 gms

Topped right inside Old Lab. Nipples 1 wide, 2 high. Imperf. vag. ut horn 37 long x 2 wide; dark gray.

1804 ♀ no repro. activity. *Myotis nigricans* 77-32-8-12; 39 ms

Found dead at Kitchen.

July 10
1805

Bat. Small young.

Found alive by Carl Rettenmeyer near New Lab. In ^{formalin} ~~RH~~

skull July 17
1806

Pickup. In water at Boat Landing.

July 19
1807

♂ *Proechimys semispinosus* 458-203-57-24. 490 gms.

Brown dorsal, white vent, rat.

Topped edge water, evening. Fleas, mites, small ticks on. Large semen plug penis. 5 fleas, 3 ticks, 100+ mites. Large semen plug. Testes huge, 37 x 19 mm. Epid. with milk (sperm?). Much swollen seminal vesicles.

1808 ♀ *Proechimys semispinosus* Rat. 428-187-53-23; 444 gms.

Same trap 2 hrs. later (10 pm.). Vag. perf. 8 mm. diam. Nipple & clitoris not pigmented. Ut. horn. 40 x 4. RH 2 lumps 15 mm. diam. perhaps resorbing. 1 yellow corpus 1 mm. diam. LH 4 black scars; 1 ovary 3 corpora, yellow, 1 mm. diam. 5 stomach worms.

1809

Bat. Small young. In alcohol.

Found alive in Chapman House by Carl Rettenmeyer.

Chapman
1956

2

Specimen catalog

August 2 Barro Colorado Is., Canal Zone (Kitchen)

1810 ♀ Proechimys ^{semispinosus} Rat, brown above, white below. 318-138-44-21, 198 gms.
slight fat. No emb. Ut. horn 3 x 1 1/2. Vag. unperf. Nips & vulva no pigment. Nips 1/2 mm.
Pulp & veg. matter stomach. Skull broken. 6 ± mites & lice.

Aug. 22

1811

Salamander. Richwood night forest floor nr.

Allen Creek 100 yds. N. of New Lab.

Aug. 28
1812

Frog; black, green spots back. On boulders day,

Lutz Stream near Donato 100.

Sept. 9 Val de Anton,

Panama

1813, 1814 Atelopus varius. Coll. Hugo Wilmar about Aug. 31. Don-
ated to B.C. Island & pickled today. (One in formalin, 1 in alcohol).

Sept. 28

Summit

Canal Zone

1815 ♂ test. 8 x 4. 1 mm. Caluromys derbianus

615-375-40-33, 200 gms. Dead on road. Skull smashed.

October 3

1816

Frog.

2" nose-rump. white belly

& throat. Dark brown back, lighter on sides. about 31 mm. wide irreg-
ular black specks between ear & shoulder. Salt & pepper posterior
thighs. Pale tip nose. In ROH direct. Table at Bytek Office at night.

October 7

1817 Imm. Sigmodon hispidus Caught evening, styer Chapman House.

October 10

1818

Small bird

Test Table Bldg.

October 24

1819 ♂ test 13 1 mm. long
Pipra mentalis

14 1/2 gms. No. white iris.

Flew into Chapman House & against screen. Tarsipale brown,

Ko Ard
1956

3

Specimen Catalog

October 23 Barro Colorado Is., Canal Zone. (New Laboratory) ^{Mist net,}
1820 ♀ Molossus coibensis 93-31-9-14, 18½ gms. stom. full.
Slight fat. No emb., put possible scar uterus. R myxipile enlarged (1x1).

1821 ♂ Molossus coibensis 94-33-9-13, 18½ gms. slight fat.
Test. 4x2½. Throat gland prominent. Stomach full.

1822 ♂ M. coibensis 97-35-9-14, 10 gms. Died in refiq.
Test. 4x2½ mm. slight fat.

October 30

1823 ♀ Empidonax ^{vireocens} ~~sp.~~ 12 gms. slight fat. Imm. Skull 4/5 ossified.
Died of injury in mist net.

1824 ♀ vag. perf.; ut. 10x1½ mm. Artibeus ^{21" wingspread} litoratus 76-0-9-22; 75 gm.
Mist net, 8 p.m. (raining earlier). Land high above when fed. Fr. Chapman House.

October 31

1825 ♂ test. imm. Tanagra laniirostris 11 gms.; pin + feathers.

Chapman House; mist net; 7 a.m.

1826 ^(no sperms)
October 30 ♂ test. 4x3 mm. Glossophaga soricina 62-8-11-13; 17½ gms.

+ Forearm 23. Wingspread 240 mm. Very long slender tongue. Tail sticks
2 mm. above center patagium. Mist net, Chapman House, midnight.

November 2

1827 ♂ t. 7x5 Artibeus jamaicensis 85-0-15-21; 50 gms.

Mist net 11 p.m.m. Chapman House.

November 3

1828 ♂ t. 5x3 Saccopteryx bilineata 69-19-11-14; 7½ gms.

Beter. Lutherum Van Tyne trail big tree, 10 a.m.

November 4

1829 ♂ t. 13x7 Zygodontomys cherriei 207-94-23-16; 54 gms.

Inside New Lab; trapped. Mary Rice.

Specimen Catalog

Nov. 4 Barro Colorado Is., Canal Zone1830 ♂ t. 4x3 Artibeus cinereus 51-0-12-14; 11 gms.

Net nr. Chapman House.

1831 ♀ noq. perf.; nips not emb. Vampyroides ^{major} 78-0-15-22; 17 "winged."Mist net nr. Chapman House (same time as 1830 & an Artibeus ♀.)Nov. 7 Frijoles, Canal Zone (Common at bamboo on walls)

1832 Small lizard yellow head & throat; black body. On eave in house

1833 Barro Colorado Island, Canal Zone1833 Theridactylus rapicaudus Ceiling Barlow Point house. Gray, brown, & white mottled back; dirty pale grey beneath; iris yellow-brown; vertical pupil. Locally called "scorpion." Large eye, no lid.Nov. 31834 ♂ t. 4x3 Saccoteryx bilineata 70-16-12-16; 7 gms.

Van Tyne trail, Big tree, between Luittrissen. Netted daytime.

Nov. 71834 ♂ 5x3; scrat. naked, black. Rhynchiscus naso 50-11-7-10; 7 gms.

One of 3 hanging under tin roof over boat in boat house.

Nov. 91835 Cocoli, Canal ZoneSKIN, & body SK. 1835 ♀ no repro. activ. Cyclopes didactylus 350-196-30-10
Coll. W.E. Lundy. Crawling road night. Died 2 days later.November 9 Barro Colorado Is., Canal Zone1836 ♀ no emb. Lonchophylla robusta 72-10-12-17; 15½ gms.

Chapman House, mist net, about 9:30 p.m. Vag. perf.; nips ½ mm. long.

1837 ♀ no. emb.; nip 2 mm. Vampyressa nymphae 56-0-10-18; 12 g.

Pale faint dorsal stripe. Chapman House, mist net. Yellow ear margins & tragus.

November 141838 ♀ vag. imp.; nip. < ½ mm. Sigmodon hispidus 230-104-31-19, 60 gms.

Tallgrass, snap trap, Plantation Point.

Banded

to

605 - return

blood s. {

T. inornata 59-16616 RT #1

T. fulvivena 59-16617

Specimen Catalog

1956

Nov. 17 Barro Colorado Is., Canal Zone. (clearing)1839 ♂ Nasua narica 1155-565-115-40, 11 lbs.

Testis 25x20mm. Saved skull + R humerus.

1840 ♂ Nasua narica 1035-455-105-40, 11 lbs. Test. 30x20

Previously marked (for R lateral factor clipped) on Oct. 14. Saved skull + R hum.

1841 ♂ Nasua narica 1145-54⁰_N-110-40, 13 lbs. Test. 25x17.

Saved skull + R humerus.

1842 ♂ Nasua narica 1115-550-110-39, 12 lbs. T. 22x17

Tache eyes + ear.

1843 ♀ Nasua narica 1020-510-100-39, 7 1/2 lbs

1/3 grown juv. mv. trap.

Nov. 20 Gamboa, Canal Zone1844 ♂ ^{♀ juv.} Amazilia tzacatl 4 gms. at porch light at night.Nov. 19 Summit Gardens, Canal Zone1845 ♂ Uroderma bilobatum 62-0-11-18, wgs pd. 12", 17 gms.

Under tent in leaf talipot palm. Test. 3mm. Mod. fat.

1846 ♀ U. bilobatum 64-0-11-18, 17 gms.Nov. 20 Barro Colorado Is., Canal Zone. Net at Bk 1/2, night.1847 ♀ Artibeus cinereus 56-0-12-17, Forearm 40.Nov. 211848 ♂ Artibeus cinereus 58-0-11-16.

Mist net, betw. 10 p.m. + 2 a.m.

~~58-0-11-16.~~

Released 2 imm. of same; grown but gray, soft fur.

1849 ♂ Artibeus jamaicensis 83-0-17-23. Imm.?

Taken betw. 7 p.m. + 8 p.m., mist net.

Nov. 221850 ♂ Centurio senex 53-0-13-16, 15 1/2 gms.

Mist net, Ketchikan, 9 p.m.

Specimen Catalog

1956

Nov. 22 Barro Colorado Is., Canal Zone.1851 ♀ nips 1/2 mm. Uroderma bilobatum 59-0-10-18, 17 gms.

Edge clearing nr. New Lab, evening, mist net. 7 mm. bulge in uterus.

1852 ♂ t. 4 mm. Molossus coibensis 95-33-11-13, 15 gms. Wgs pd. 10 1/2.

Mist net nr. Kitchen, 8 p.m.

Nov. 231853 ♂ Artibeus lituratus 96-0-20-24, 58 gms.

Mist net edge clearing w. of New Lab, evening.

Nov. 241854 ♂ Carollia perspicillata 78-11-13-21, 21 gms. 13 1/2" wgsd.Mist net edge clearing S. Chapman House 8 p.m., with ^{Uroderma} ~~Artibeus~~ ~~watsoni~~.1855 ♂ t. 3 Uroderma bilobatum 61-0-9-18, 16 gms.

13" wgsd. Same as 1854.

1856 ♀ nips 1 mm. Vampyressa minuta 46-0-9-14, 7 gms.

Chapman House, mist net, about 10:30 p.m. 9 1/4" wgsd.

Nov. 25 Orchid Island, Canal Zone [Island across to N. from Orchid]1857 ♂ t. 6x5 Micronycteris megalotis 60-12-9-22, 6 gms. wgsd 9 3/8"

1858 ♂ t. 6x4 " " 59-11-9-22 5 1/2 gms. 12 1/2" wgsd.

1859 ♂ t. 7x6 ^(Xenonycteris) Micronycteris hirsuta 79-16-12-26, 15 1/2 gmsIn darkest sentry box on Orchid Is. side ^(w) of French Lock; 5± in bunch; no others found.1860 ♂ t. 7x4 Carollia perspicillata 78-14-14-19, 21 gms. (allowed too much tail)

Normal ears? In sentry box east side French Lock.

♂ no emb. t. 6x4

1861 ♀ nips sm. Carollia perspicillata 72-8-13-19, 18 gms.

Same place as 1857, 8, 60. Longer ears than 1860.

Nov. 24 Barro Colorado Is., C. Z. Ichapm.1862 ♂ Artibeus ^{cinereus} watsoni t. 4x3 59-0-10-18, 12 gms. 12" wgsd.

Mist net, Chapman House, evening.

Specimen Catalog

Nov. 28 Barro Colorado Is., Canal Zone

1863 ♂ t. 4x3 Chiroderma isthmicum

13 1/2" wgs pd.

64-0-10-18, wt. 22

Edge clearing near Chapman House 8 p.m. (w. Artif. lit. palm.)

Nov. 29

1864 ♀ no emb. C. isthmicum

68-0-13-18, wt. 23

1865 ♂ t. 3x2 C. isthmicum "

wgs pd. 13 1/2

69-0-12-18, wt. 20

1864-5 same net as 1863, next a.m. Ears yellow.

Dec. 2 3 mi. SE Gamboa, Canal Zone

hips 2mm, black.

1866 ♀ no emb. Saccopteryx lepturobilineata 74-18-11-16, 8 gms.

1867 no emb. " " " "

73-19-10-16, 12 3/4" wgs pd.

Both on screen under eaves Mrs. Barrett's house, 10 a.m.

+868 discarded

Chilibrillo Caves, Chilibre, Panama

1869 ♂ t. 5x3 Phyllostomus hastatus 25 1/2" wgs pd.
152-23-24-35, 120 gms.

One of group 20+, mostly dark gray.

1870 ♀ imm. Phyllostomus hastatus

24 1/4" wgs pd.

141-24-22-33, 85 gms.

Many imm. with few red-brown matures.

+1871 imm. discarded

1872 ♂ t. 4x3 Saccopteryx bilineata

76-21-10-16, 7 gms.

Nr. entrance inside limestone cave.

1873 ♀ no emb. Carollia perspicillata

73-8-13-22, 16 gms.

Hundreds in cluster on ceiling limestone cave.

1874 ♂ t. 6x4 Carollia "

74-11-12-21, 18 gms.

Testes scrotal. But ♀♀ breeding?

Dec. 5 Barro Colorado Island, C.Z.

1875 ♀ Noctilio (Dirckx) labialis minor

16 1/2" wgs pd.

89-18-15-23, 25 gms.

7:50 p.m. in net 40' upslope from stream below kitchen. Veg. open,

mod. pigm. Hips. < 1/2 mm, but 3 mm. bare area surrounding.

Specimen Catalog

Barro Colorado Is., Canal Zone

1876 ♂ t. 4⁺3 Chiroderma isthmicum

67-0-12-17, 23g.

Same net as 1875, at 10 p.m.

Dec. 6

1877 ♂ t. 5+5 Artibeus jamaicensis

19" wgd
90-0-18-22, 57gms.

Good facial stripes + yellow-white tanager.

forearm 66. Mist net, Lutz Trail, after 10 p.m. prev. eve. 6 mites (membr.) 1 fly.

1878 ♀ Artibeus jamaicensis

90-0-18-23, 48g.

Poor facial stripes, gray tanager.

forearm 61. Nipple 3mm. long, 3 wide, mod. turgid, mod. pigmented. Vag. open +

lips mod. pigmented.

Skull
only

1879

♀

Fr. Joles, Canal Zone

Molossus abrasus

Bot. Pickups in attic R.R. Station.

Dec. 8

Barro Colorado Island, Canal Zone

nullip.

1880 ♀ Artibeus cinereus

wg spd. 11"
34-0-9-16, 11gms.

mist net at boat landing, 15' from shore, in a.m.

1881 ♀ Chiroderma isthmicum

wg spd. 14 1/2 forearm 47
72-0-13-20, 24gms.

mist net m. Chapman House later. 11:30 p.m. + 6 a.m.

no emp
1882 ♀ n. 4x4 Artibeus jamaicensis

wg spd. 18" forearm 64

85-0-15-23 46gms.

Prob. lactat. R. ov. pink; Left white, smaller. V. wide perf. clit. pigm. 10⁺ mites + 2 flies.

Mist net between Chapman House + balustrade to S.E., betw. 10 p.m. + 1:30 a.m.

Dec. 10

Nip's 3x3mm.

1883 ♀ Artibeus lituratus palmarum

forem. 73
96-0-18-25, 80gms.

Same net as 1882 in morning after 2 a.m. L. ov. 1.8 with white spot

.6mm. diam.; R. ov. pink, 3 1/2 mm. diam. Vag. wide open, lips pigmented.

Dec. 11

1884 ♂ t. 7mm. Artibeus jamaicensis

83-0-15-22, 30gms. forearm 61.

mist net at tank W. of 1452 Lab.

1885 ♂ t. 5+3 Artibeus lituratus

forearm 72 85-0-13-25¹⁷, 50gms.

mist net m. edge clearing in night or a.m.

1886 ♂ t. 3 Carollia perspicillata

71-10-14-21, 20gms.

wg spd. 17"

1887 ♂ t. 6.7 Artibeus jamaicensis

forearm 58 84-0-15-22, 50gms.

Dec. 12

mist net, a.m., m. Chapman House, with 1887. Forearm 45, wgd. 14"

1888 ♀ Chiroderma isthmicum

60-0-12-19, 22g.

Specimen Catalog

Dec. 23 Orchid Island [N. shore], Canal Zone1889 ♂ t. 2x1 Micronycteris hirsuta 69-11-13-25, 119ms.

In concrete Sentry Box in daytime with 3 others in bunch.

1890 ♀ ^{nip tiny} ov. inact. M. hirsuta 73-12-12-24, 113ms.1891 ♀ ^{nip tiny} ov. inact. " " 68-13-12-23, 103ms.Dec. 27 Frijoles, C. Z.
Skull only 1892 ♂ Eumops abrasus forearm 59

mummy 1893 ♀ " " " 58, tail 44

mum. 1894 ? " " " 58, tail 41

mum. 1895 ♂ Molossus coibensis " 37, " 29

1892-95 mummies on floor attic of RR station.

1957 Jan. 3 Barro Colorado Is., Canal Zone1896 ♀ 1 emb. C-R 15. Glossophaga soriculata 66-9-10-15, 119ms.

Nip tiny, hairy. Emb. 10x15 bulge. Mist net, clearing, nr. 1952 Lab.

Hd. ut. 4mm. 1897 ♀ Ror 2mm. Artibeus cinereus watsoni forearm 39 54-0-10-17, 169ms.

nip. 2x2mm; slight pigment.

1898 ♂ t. 5x3 Vampyroides major forearm 57 78-0-12-22, 339ms.

Mist net SMI evening.

1899 ♂ t. 5x3 V. major fore. 54 79-0-13-22, 339ms.1900 ♂ t. 5x3 V. major forearm 55 80-0-14-22, 389ms.1901 ♀ ^{remb.} t. C-R 13 V. major nips 2x2, yellow, A. Ventrals lip pigm. 84-0-15-21, 369ms.1902 ♂ t. 6x4 V. major 84-0-13-22, 329ms.Jan. 121903 ♂ Centronycteris maximiliani 78-21-7-18, 59ms.

Hand net evening at SMI 1/2. (Skull broken)

1904 ♀ ^{nip ~ 1/2 m.} no ov. activ. Micronycteris megalotis 57-15-9-22, 5129ms.

1905 ♂ t. 1 1/2 long " " 42-12-10-21, 40ms.

1904-5 in Tower House with Scopteryx bilineata.

Specimen Catalog

Jan. 11 Barro Colorado Island, Canal Zone
skull only
1906 ♂ Mazama americana

Poacher killed. Ad. ♂, testis. size first finger man.

Jan. 13

a.n.e.
1907 ♀? Phaethornis superciliosus 5 1/2 gms.; no fat.

Netted edge clearing W. of 1952 Lab. Killed self in screened room.

Jan. 26

sk. + skull.
1908 ♀ Tamandua tetradactyla 1013-526-46-42, 8 lbs.

Nip 4 wide x 3 high, no pigment. Vagina unpin, no perim. No enlarged follic.

Jan. 28

t. 2 1/2 diam.
1909 ♂ Florisuga mellivora 6 gms.

Mist net edge clearing n. Chapman House.

Jan. 29

Phyllostomid - face stripes
1910 ♂ t. 6 x 4 Artibeus cinereus 55-0-9-16, 12 gms.

Mist net, Paper slope N. of 1952 Lab.

9 Feb. 1957 Gamboa, C.Z.

1911 ♂ Rhynchiscus naso 43-9-6-10

Killed hanging near garage door daylight

Fortobelo, Colon, Panama

1913 ♂ t. 5 x 3 Glossophaga soricina 65-9-10-16, 9 gms.

1912 ♂ t. 5 x 4 Carollia perspicillata 75-11-13-21, 16 gms.
Age 43

These in rather dark rooms of old flat at west edge town.

12 Feb. 1957 Barro Colorado Is.

1914 ♂ Carollia castanea forearm 36
65-12-10-18, 10 gms.

1915 ♀ 1 em^h Carollia perspicillata 76-10-12-21, 19 gms.

Nip tiny, unpig. Vag. surf. slight pigment. 2 flies; 10 chiggers.

1914-15 in mist net edge clearing near 1952 Lab.

Specimen Catalog

1957

Feb. 22 Barro Colorado Island Canal Zone

1916 ♀ Glossophaga soricina ^{to wgs pd. 10 1/2"} 66-9-10-15, 129 ms. forearm 36
 1 emb. C-R 30, TL 43. Nip 2x1, mod. pigm.
 Inside hollow large space in Bat Cave, hanging to wall 5' up.

1917 ♀ Glossophaga soricina 67-7-11-15, 139. forearm 37
 1 emb. C-R 22. Nip 1 1/2 x 1 (slight pigment). Shot with 1916.

March 5 Panama, prob. nr Panama city.
 skull only 1918 Sylvilagus

Pet from cage in Summit Gardens.

March 10 Summit, Canal Zone

1919 ♂ Rhogeessa parvula ^{wgs pd} 77-33-7-11, 8 1/2 gms.
 Forearm 30. Nipples like, pale belly.
 Dead under clump tall bamboo. (Found by Rolf R. Koford)

March 13 Gamboa, Canal Zone

1920 ♀ o.n.e. Spizartus No fat.

Shot by policeman; perched near road.

March 20 ♂ Empire, Canal Zone
Nyctibeus griseus

153 gms., ^{no} slight fat.

1921 Testis 7 mm. long. Shot night; perched vertically atop reed.

April 5 Ft. San Lorenzo, elev. 10' Canal Zone.

1922 ♂ t. 1 mm. Natalus ^{saturatus} mexicanus 95-49-9-12, 50 ms.

1923 ♂ t. 5 x 3 1/2 Glossophaga soricina leachii 60-7-11-15, 100 ms.
 wt. 3.3, forearm 18, wet w/o plac. Nip 2 x 1 1/2, pigm.

1924 ♀ 1 emb. C-R 27 Gloss. sor. leachii 68-8-10-14, 16 gms.
 fore. 35 1/2

1925 ♂ t. 4 1/2 x 4 Gloss. " " 65-8-10-15, 10 gms.
 fore. 45

1926 ♂ t. 8 1/2 x 6 1/2 Carollia perspicillata azteca 81-13-14-21, 20 gm.

1927 ♀ 1 emb. C-R 29, haired Carollia perspicillata 74-8-13-20, 24 gms.

Nips 3 mm. wide, turgid, black, milk expressed; lact. tissue; forearm 40 1/2.

1922-1927 in sea cave 10' high x 8' wide, 100' deep; at base cliff.

NW of Ft. 200± Carollia + 50± Glossophaga present.

C. Koford
1957

12

Specimen Catalog
Panamá

April

17 2 mi. N. Summit, Canal Zone [Sardanyillo Mine]

1928 ♀ Lonchorhina aurita 109-49-13-29, 13 1/2 gm.
Wgsd. 14". Lact. tissue. Black nips 3x3 mm. Fm. 52. Ut. 10 long, slight pigm. ^{Volvo}

1929 ♂ Lonchorhina aurita 107-57-13-30, 10 gm.
^{T. 3x2 mm}

1930 ♀ lact. L. aurita 112-53-14-29, 13 1/2 gm.
hip. 3x3, black. Ut. 17x7 (enl.).

1931 ♀ 1 emb. C-R25 L. aurita 108-51-14-28, 15 1/2 gm.
ut. 25 mm. long (empty) (w/o membr.).
Nip. 2x2, black, bare around. Emb. fused. 25x15 in membr., wt. 3 gms.

1932 ♀ lact. L. aurita 112-52-13-28, 12 1/2 gm.
Nip. black, 3x2 mm, ut. 14x6 w.

1928 to 1932 in old mine tunnel 100' deep, 6' high, wet, rocks.

1933 ♂ ~~(Dinias)~~ Noctilio labialis 97-23-13-20, 22 1/2 gm.
T. 4 1/2 x 3 1/2, brown. Ch. ~~mycterus~~ rubrocapillus ~~frum.~~
frum. 61; wgsd. 15 1/2.

1934 ♂ ~~(Dinias)~~ Noctilio labialis 95-22-14-19, 22 gm.
T. 4x2, 1933-34 in same tunnel as Noctilio labialis above.

24 April 4 mi. E. 1 mi. S. Pacora, Panama - [La Jagua Gun Club]

1935 ♀ lact. Micronycteris megalotis microtis 63-13-11-19, 12 gms. wgsd. 10 1/4"
frum. 35
clinging juv. 2 gms. frum. 15, gray fur, wgsd. 4".

1936 ♂ imm. Phyllostomus hastatus pan. wgsd. 23"
136-21-21-29, 86 gm.

Shot dusk grassland bordering savo forest in savannah area.

1939 ♀ 1 emb. C-R21 ~~Chito~~ Micronycteris meg. mich. 61-12-10-20, 7 1/2 gm.
nip. & v. not pigm.; nip. 2w. x 1h. In hollow log with 1935.

25 April

→ Zyg.?

188-83-22-10

1937 ♀ 4 emb. Zygo? Light forest in savannah land.
vag. nip., nips not enl.

1938 ♂ t. 4x2 1/2 Oryz.

167-97-21-10.

1940 ♀ lact. Marmosa

295-165-19-18

Base stump in 6' tall second growth forest. Mango bait. No juvs. attached.

1941 ♀ lact. Zygo.

226-90-14-16, 75 gm.

Light second growth in savannah area.

Specimen Catalog - PANAMA1 May 1957Gamboa, Canal Zone1942 ♀ 1 emb. C-R 19 Saccopteryx bilineata 60-15-7-12

wgd. 11", frm. 42 mm. Net 8 p.m. edge clearing.

2 May 1957Chilibre, Panama [Chilibrillo Caves]1943 ♂ t.n.e. Pteronotus s. suapurensis 90-23-12-18, 15 1/2 gm.,
frm. 53, wgd. 13 1/2"

1944 ♂ t.n.e. " " " 90-25-10-17, 15 gm.

1945 ♂ t.n.e. " " " 88-24-11-16, 15 gm.

1946 ♂ t.n.e. Lonchophylla robusta 73-10-12-15, 19 gm.1947 ♂ Desmodus rotundus murinus 86-0-18-17, 35 gm.
t. 8 x 6 frm. 57, wgd. 14"

1948 ♂ t. 7 x 6 " " " 88-0-14-16, 39 gm.

All near ceiling caves of limestone. 1943-45 in solid
bunch 3500±. 1947-8 in narrow side tunnel, dark, water on
floor (pools). Also in cave Isosceles, Carollia, Phyllotomus
hastatus, Saccopteryx (near entrance).

Madden Wye, Canal Zone1949 ♀ 1 emb. Artibeus jamaicensis j. 80-0-16-19, 55 g.

frm. 61. Nip 2w x 1h, pink.; roq. lips pigmented. 1 emb. C-R 31

1950 ♂ t. 7 x 5 Artibeus j. j. 89-0-17-19, 48 gm.
frm. 63.1951 ♀ Artibeus j. j. 89-0-18-19, 49 gm.
frm. 64. Nip. 3w x 2h, black r. ob. bulge 6 x 6.skel.
1952 ♀ Artibeus j. j. 87-0-18-19
1 emb. C-R 16

Discarded imm. 41 gms., ♀, forearm 60.

1949-52 in attic concrete gasoline storage house.

Chilibre, Panama. [Chilibrillo Caves]skel.
1953 ♂ Pteronotus s. s.skel.
1954 ♂ Phyllotomus hastatus pan. 148-18-25-33
t. 7 x 4. 4 x 3
144-19-24-29

C. Koford
1957

Specimen Catalog - Panama

June 11 Barro Colorado Island, Canal Zone

~~1955~~

1955 ♀ Tonatia amblyotis

101-21-16 - 34 30 gm.

frm. 51, wgsd. 15"

with another inside open-bottomed old termite nest, 12' up.

1956 ♀ Micronycteris

57-13-9-19, 6 gms.

one of bunch hanging from ceiling Tower House. wgd. 9 1/2", fore m. 34
(♂ juv. 4 gms. in bunch too, + 2 ♂♂, + another).

1957 ♂^{♂. 3x2} Micronycteris

50-14-9-20, 6 gms.

Choford
1957

Journal

13 May 1957

To San Isidro del General, Costa Rica

Sue and I left San Jose by bus for San Isidro at 6:20 a.m. Bus went via Cartago on paved road, then on dirt road where life had a more primitive look. The road climbed through cut-aver cloud forests where there was a scattering of 100 ft. tall narrow crowned trees. Trees carried many reddish-leaved bromeliads & many lichens. Apparently much cutting of logs, the squared 15' long pointed sections lying by road at many points. ~~At~~ at highest, perhaps 10000 ft., road passed through an island of páramo zone, dominated by an elongate-leaved shrub about 5' tall. Rocks covered here with gray lichens. (Archie Carr & later Alexander Skutch told me this was the northernmost páramo). On occasions saw distant volcanoes, or the ocean to W. down steep green valleys. Descended steep-sided forested slopes to the broad (3 mi.) valley of the river General, and reached San Isidro. This at present end of Pan-Am inter. Highway. Arrived a bit earlier. Lunched on black beans & rice at El Jardin. Found Juan Schroeder about 2 p.m. (we had met him in San Jose at Pension Canada). He spoke English well, had been to the agricultural school at Zamorano, & had a farm near San Isidro. His father an old timer with large finca, and a friend of Skutch. Juan took Sue & I in his jeep over a rocky road, across a river reaching above floor of jeep, across a cable suspension bridge that sagged 2 feet as the jeep passed, & up a jeep trail to Skutch's place, about 12 miles from San Isidro, & probably not reachable by jeep except in dry season (wet just starting). Juan said Skutch did not like jeeps in his place, but for him would not mind. We went to the small house surrounded by lawn, garden trees, & fruit trees. Skutch appeared out of a nearby shack - he had been getting a haircut. His wife (nee Lancaster, 3 yrs. married) was with him. We talked birds mostly, & the area & region.

Choford
1957

2

Journal

13 May 1957

San Isidro del General, Costa Rica

Sketch about 50 or 55, his wife perhaps 40. He seemed a mild gentle shy man. Features somewhat sharp, and complexion somewhat dark. He showed us his notes. He takes field notes in small notepad. Then rewrites into a journal, continuous, in school-type bound notepad, in ink. at left margin is index - species, and kind of behavior. The many volumes of these notepads kept in a square large - suitcase sized box. A smaller elongated box holds index. ~~He has~~ a sheet for each species, & under subheads such as "nesting" a series of numbers (volume & page of note info in notepads). Visible library was small - about 6 shelves about 5 feet long, many of the books being on philosophy or religion.

We went for a walk in the 100 acres of forest near his house, where he does most of his work. Heard motmots, woodcreepers, Tinamous. almost no birds - he said less trespassing there. He thought the forest near climax, though I saw no trees over 3' diam. (Brosimum utile). Much leaf mold & leaves underfoot - black, organic matter diggable with fingers to depth of a foot or more. Slope gentle. Heard & saw Cebus. Some soil mounds as of a Geomys rodent (Macrogeomys?). S. said agoutis present. He showed us nest of a Malacoptila - a deep hole in forest floor with entrance a more pocket, fist-sized, among twigs. We saw a buff-rumped toucan, & its nest (on the ground!). A rushing 15' wide rocky river near the house. Torrent flycatcher said common here.

A. S. knew almost nothing of Sarcorampus or its nest, & had never seen nest of turkey vultures. He said he had never known of a jay or howling monkey in that valley.

A. S. regretted he had only room for one to guest (we were 2). His wife talkative, mild, & interested in his work, but apparently forgetful as she repeated same questions several times at intervals. Juan said they rarely left the finca - perhaps once a year - and that A. S. had

Journal

13 May 1957

San Isidro del General, Costa Rica
 few friends among local people. Apparently he likes the isolation - he had been here 20 years (jeep road to San Jose ^{opened} only ~~last~~ 12 years ago). Recently A. S. had published a thick book on "the search for the divine," but we did not discuss this. (A review in Spanish by Archie Carr in a ^{recent} philosophical paper of Univ. C.R.). Apparently Shutch had never heard of my condor work, & I suspect that he paid little attention to what other ornithologists were doing. He did no farm work himself, tho Juan thought he had on his place a family which farmed & paid rent in produce. Bananas growing nearby, & coffee in surrounding area. Elev. of Shutch's about 2500 ft., & of San Isidro about 2200, A.S. thought.

16 May 1957

Boquete, Chiriqui, Panamá

We flew via COPA from San Jose, C.R., to David, over thick evergreen forests of southeastern C.R. David low and hot, but 11000+ ft. Volcan dominates the view. A good paved road about 25 mi. up to Boquete, at 3800 ft. Town lies in bottom of a forested bowl, but much forest second growth, & much coffee growing on steep slopes. We stayed in house overlooking town, loaned by Mrs. Marita Marcial of Panama (cage bird fancier). Much rain.

17 May 1957 We climbed several hundred feet up a slope to the Piedra del Lirio, where we had a fine view and took a few 35 mm. pictures.

18 May 1957 Hiked up a road to NE of town, & a short distance into forest. Heard many interesting but unrecognized bird songs. Good camping for collecting spot here on sideroads. Saw several small-billed green toucans in patch forest next to a cafetal. Mounds suggested gophers on forest floor.

19 May 1957 Flew back to Tocumen, Panamá.

11

11

1

Kotford, C. E.

Species Accounts

Barro Colorado Isl.

Panama

Mammals

Birds

1956-1957

Cebus capucinus

September 16, 1956

1000 above 10. a.m. - one

I saw one descend from tree and go under H. H. house & reach through wire to get into bananae. "Iron", a pet of Wilmar (photographer), was in this cage yesterday, perhaps the same one that had been released admiring Wilmar. In afternoon a dark green monkey seen in trees near Chapman House.

September 18, 1956. 10:00 a.m. - one seen in trees near Chapman House. 4 p.m. - one seen in trees near Chapman House.

September 23, 1956. Apparently the dense foliated tree 50 yds. SSE of Chapman House being used as food tree, for Cebus seen there almost every day recently, at least 3 there this morning about 6:30 a.m. Also fairly common along the tracks - seen 2 or 3 times more often than Alouatta.

October 2, 1956. Still common near clearing. In a.m. about 9 saw 3 (\pm) in broad leaved tree 100' SSE of Chapman House - favorite tree at this season. On Van Tyne trail saw one on ground in path, about 4 in trees near. Often seen in same places as Alouatta tho usually at different times.

October 13 & 14, 1956. None seen near Chapman House these 2 days. Now by Oct. 23. Apparently a certain tree lost attractiveness. A white hawk apparently after two Cebus on Oct. 17 near New Lab.

July 27, 1956 Carl Rettenmeyer notes. 6+ DC 3-3.5 about 10 a.m.

December 8, 1956. Fairly common. Saw in balsa nr. Chapman House and nr. JVT 2.

December 16, 1956. Saw one visit 3 balsa flowers in succession.

CKoford
1956
1957

2

Cebus capucinus

December 16, 1956

Barro Colorado Is., C.Z.

seen near Chapman House and came to eat central part inside of something there. Few flowers during winter, perhaps because of recent feeding.

December 22, 1956. Unusually frequent along T.B. from 5 to 10, in trees & palms, often calling.

January 2, 1957 In early evening one seen going from flower to flower in balsa tree S. of Chapman House.

January 5, 1957. At least 4 seen near W.M.W. 3. At least 3 on A.V.A. near J20. One of these without tail but jumped about nimbly.

22 January 1957. Two at 4:30 p.m. in almendro at point SE of boat dock, apparently eating almendro nuts.

23 January 1957. Two in almendro NW of Kitchen apparently feeding on fresh crop almendro nuts. ~~AA~~ Nasua also high among branches.

24 January 1957 Three about 2 p.m. feeding on fresh almendro fruits in tree 100' NW of Kitchen.

1 February 1957 A few in almendros near Fair in morning & evening apparently scraping surface flesh off nuts.

16 February 1957 About 4 p.m. I saw two in balsa next to Chapman House. They went from flower to flower, apparently eating or drinking something from within.

5 March 1957 None seen in balsa or almendro near buildings in last week or 2. Almendro nuts all gone, & balsa seeding & foliage scraggly.

20 March April 1957. None seen in balsa SE of 1924 Bldg. in mid-afternoon. No young seen yet this year.

C. Koford
1957

3.

Cebus capucinus

4 May 1957

Barro Colorado Is.

Wet season seems to have much less frequency than
clouds, though believed to be more common.

28 May 1957

9-12 a.m. saw group near Tower, S M G, & another site. Much
more activity than in dry season at this time of day.

C. Koford

1956

Arizata palliata

September 1, 1950

Swampy areas, lowland and in

[illegible]

October 2, 1956 One alone apparently sick on
fork of branch 75 yds W of Old Lab. Little movement,
no sounds, & no response to sounds by me. It had
white area on tail about halfway to end ^{white}
~~area~~

Morning of Oct. 3 still there - probably sick tho pelage in good condition. Gone by noon Oct. 3. Dr & Mrs. Bregoire on Oct. 4 saw 1 ♀ & juv. with 3 ♂♂ near TB 18. One male had cut & swollen upper lip.

September 29, 1956. Near Chapman House a group of 5 in-
cluding a half grown young.

Aloatta palliata

October 24, 1956

Barro Colorado Is., C.Z.

At 8 a.m. a group of 5 100 yds. NNW of 1924 Building. apparently ♂, 2 imm., 2 others (♀♀?). One imm. ^{with} each with two larger for ~~several~~ many minutes, but later two imm. marching one larger one. all had lots in neck, suppurating. Some scratching of lot swellings. They plucked *Ocotea* leaf stalks, ate stalks, let leaves fall. I took some photos with 12 1/2" lens, Reflex, 3 1/4" x 4 1/4". Male watched closely two Cebus below, 100' away.

July 26, 1956 Carl Rettenmeyer notes. 5+ in fig tree base hill nr. TB 5.5, probably eating figs (chewed ant). 10 a.m.

August 4, 1956. 3 large ♀♀ with large young on lodes. 9 total, 10 a.m., BL 14.3. At 12:15 p.m. 12 in same tree, including young.

November 10, 1956. In mid afternoon two groups of about 5 on SSE side clearing near 1924 Bldg. One group had 2 1/4 grown with it. In lodes & other trees. Apparently eating.

December 6, 1956 Several in & near a large Ficus at N. side of SM 1/2. Many fig scraps dropped. Figs green, 1/2 to 3/4" diam.

December 11, 1956. At least 4 in same Ficus at 8 a.m.

December 13, 1956. Two at least in Ficus 100 yds. from above.

December 29, 1956. Two near AVA 7. One (young ♂?) came close, & down to 20' above 2 boys, broke off sticks, & defecated.

January, 15, 1957. Near TB 10 saw 4, one about half grown with apparent mother, all laying in near-bare tree tops.

16 January 1957. at least 4 seen in tall fig near 52 16.

Alouatta palliata

16 January 1957

Barro Colorado Is., C. Z.

A group of about 10 passed along edge clearing below Allen House in afternoon, strung out 100+ yds.

19 January 1957 Saw one or 20' overhead near Tower. No others found ^{near}.

2 February 1957 Robert Enders saw ^{small} young clinging to adult in transit near SM 1.

16 February 1957 Near AVA 3 I saw at least 8, at least 2 being juvs., in larger tall fig tree. One juv. very small, perhaps 1/5 size adult, other about 1/3 grown. Mr. P. Hawes reported a clan with ^{a small} young near Miller 10.

5 March 1957 Near Bk + saw 10 including a tiny "babe in arms" clinging to side of mother, all silent and high in crown of tree. Morning chorus about 5:45 a.m. still. On 3 March I saw 5 in top of *Bombacopsis Fendleri* near SM 1 1/2. Eating small leaves of new leaves, or bases of same, & throwing them down. I took several photos of these (2 1/4 x 2 1/4, Graflex 12 1/2" lens).

9 March 1957 A group of about 50 scouts & parents were stationed along about 11 miles of trails to count monkeys 7:30 to 10 a.m. Each pair had sector 700 to 1100 meters long. Results of counts rather poor, a total of 23 howlers and 41 *Cebus* being reported. Largest group of howlers 5, and often 1, so evidently many members of groups missed. Some inexperienced and may never have seen a monkey in the wild. Method could work with preliminary training of people & familiarization trails and monkeys. Putting best hikers on trails most distant from lab introduces error. Many camped at trail ends so as to be on the job early.

Aloatta palliata

17 March 1957

Barro Colorado Is., Canal Zone

Last evening mother & baby on low branch of a *Cecropia* about 100 yds. SE of Chapman House, at 7 p.m. Still there 6:10 a.m. but soon departed. Young one ^{very} small, clinging to mother.

6 April 1957

2 groups of 10 each seen at 10:30 a.m. at 100 yds. SE of 1924 Bldg. (one carrying young in mouth).

13 April 1957

at least 5 in *cecropias* & other trees 50 yds. SE of 1924 Bldg. Two ^{each} carried a small young. Young one clings upside down to chest mother as she climbs along branches. Some of group howled when gasoline engine at 1924 Bldg. started. 9 April in p.m. there were 2 out in same tree near 1924 Bldg.

20 April 1957

at least 5 in same tree as 13 April. 1 heard singing at 10:15 a.m.

27 April 1957

Found skeleton, termite still feeding on parts, in bed Alles Creek about 200 yds. above 1452 Lab.

4 May 1957

Saw at least 5 including small young separated from mother at 520. On 30 April saw about 8, perhaps some group, at AVA 2.

7 May 1957

a lone ♂ eating figs in tree near TB6. Not especially large.

28 May 1957

Saw group of 3+ at BL 2 about 9 a.m., & at 11:45 a group of 3+ at 3M 1 1/2.

1 June 1957

Saw 1 and heard others 100 yds. to left (going out) of AVA 13, about 10:30 a.m.

Nasua narica

July 18, 1956

BC Island, Canal Zone.

Several near buildings every day. Cosh feeds left over food on lawn. Tail expressive, up high when several together, probably lowered in submissive attitude. A tame jaguarundi brought within 15'. One coati walked to B; tail high. When man closed back coati the jaguarundi ran after them. Mr.

Wilmer, photographer, said coati disappeared at one time earlier this year, then returned again to headquarters area.

July 25, 1956 About noon two half grown seen with two different adults (4 juvs. in all) on lawn at Hashine Bldg.

August 7, 1956. The bunch of junks on lawn near Fitch-en include 7 juvs., about 1/4 size adults.

September 9, 1956 Hugo Wilmer has had about 5 imm. and 3 adults in an enclosure for about 2 weeks. I trapped one adult & 4 young & marked them. // Adult ♂, 40" total length, 13 3/4 lbs. I clipped fur of crown, slit left ear (D), cut off LF toe III (medial). Testes appeared abdominal. Chloroform, ^{recovered} later ^{was} released. // Imm. ♀, slit R ear, 1150 gms.; clipped crown, cut off toe LF III, IIII. // Imm. ♂, slit R ear, 900 gms., clipped fur R rump, cut off toe LF II+II IIII. // Imm. ♀, 1350 gms., slit L ear, clipped toe ~~LF LF~~ LF II+II IIII. // LF X III IIII. // Imm. ♀, 1050 gms., slit L ear, cut off outer front L toe. // Imm. squeal much when held. One adult came as if to attack me when two different young taken.

54321	678910X
50 40 30 20 10	60 70 80 90 100

Marked roots

LF 1111X medial ad. ♂ Sept. 9

1111

3
1111

1111

X111

5
X1111

RR 1111X 10 Oct. 14 ♂ ad.

Nasua narica

September 16, 1956

Barro Colorado Isl., Canal Zone.

The family of 7 young coatis were up at kitchen. Red paint (Testor's dope) gone from forehead one, but clipped fur evident. Enclosure left open 7 days ago.

October 14, 1956. Sue K. says she saw a small young near kitchen. Several half-grown seen there about a week ago. One adult has injured left hind foot & holds it well above ground always. Trapped this one in Nat. L. T. Co. trap. Weighed 11 lbs., ♂. Slit 1 ear, other already slit. Cut off outer toe R Front foot. Anesthetized for 4 min. with ether in $1\frac{1}{2} \times 1\frac{1}{2}$ ft. cage. It was 6 minutes out of cage before it could stand; walked 4 min. later. Painted L side black orange. This one has slit cut near right nostril & holds L H leg up when walks. Teeth indicated old. Testes scrotal. Gray on sides. Recovering from ether, one of first acts was to lick tail. / Trapped another ♂, testes scrotal, darker color. Weighed $11\frac{1}{2}$ lbs. One ear already slit. Escaped in handling. Same odor to this one in trap. No parasites or mites apparent on either animal.

October 23, 1956. The orange one still hanging around kitchen (#10 toe off). Oct. 21 one seen there with deep slash to bone across back; cut 4" long & open but did not seem to hinder animal much. One climbed lime tree within an hour after I hung a hummingbird feeder there & turned it over. Several times a feeder found on ground recently, often with branch broken - apparently coati work.

Nasua narica

November 17, 1956

Barro Colorado Is., C.Z.

Trooped some around buildings & examined. 1155-569-115-40, 11 lbs., ♂, Mod. fat. No ectop. found. Ovary
 Nasua examined for ^{endo-}ectoparasites. Testes 25 x 20 mm.

January 7, 1957. Trooped with 1155-569-115-40 at 1st building.
 for examination by R. Enders. ^{Thurman} found ticks, chiggers, lice, & mites on its skin. Caste
 measured 1400-450-110-40, 10 lbs., testes 24 x 14. Saved
 baculum, R humerus, skull (cooked slowly).

16 January 1957. Saw 2 or 3 near AUA E, & 1 about 5214.
 Seen more often than Dasyprocta far from lab.

23 January 1957 Saw 2 at least 40' up in almondo tree.
 Probably feeding on husks of almondo nuts. Alus doing same.

JAN 27 1957 Killed a ♀, 8 lbs., near Kitchen. Examined by
 R. Enders. No embryos, but slight pigment lips
 vulva & on nipples. Red chigger clusters on ears & some
 nipples. Enders saved skeleton. We saw about 15 (only
 one juv.) on Kitchen lawn at mealtime. Heliodora still
 feeds there though she has orders not to.

31 January 1957 Saw 3 by green eyeshere about 20' above
 ground in tree to SE of Chapman House about 8 p.m. Trooped &
 killed 10 lb. ♂, testes, near Kitchen.

4 May 1957 Near 1924 Bldg. about 4 scraggly looking
 pregnant females occasionally seen. No young seen yet. Often
 during last few weeks have seen 1 to 4 in large Cecropia
 going from fruit to fruit as if eating ants or other insects there.

Tamandua tetradactyla

July 24, 1956

B. C. Island, Canal Zone

Saw one where Bonato trail enters forest from clearing, at dusk. It nosed about old log, then uphill went. Paid no attention to me.

September 29, 1956 Saw one about SM 3 climbing tree near the hollow strangler fig.

December 8, 1956. Saw 1 m. TB 9. Climbed tree & crashed over on stem palm leaf 20' above ground.

December 16, 1956. Saw one about 11 a.m. near TB 20 going from tree to tree 30 feet above ground with much noise of crashing.

December 22, 1956 about 50 yds. S. of TB 10 one 30 ft. above ground in tree.

23 January 1956 In afternoon Murl Deusing caught one by tail near SM 2 and brought in to photograph. Apparent ♀. Sleeps rolled up with forelegs head tucked out of sight under body. Alarmed sometimes stands with hind feet far apart, propped by tail, forelegs spread wide, as if ready to embrace.

24 January 1956 Deusing photoed in movies & I in stills the anteater. Placed on bare vine it ascended slowly to top. Later came crashing down, & I put in cage to hold for examination. Can be carried by tip of tail, shaken down when tries to climb up to hand. In afternoon I saw one at AVA ¹⁰ 8 1/2. It ascended 15' tall palm rapidly, then remained very quiet at top. I tried 35 mm. color photos in top. Kept in cage.

26 January 1957 Nearly dead in cage (perhaps was in sun), & died by noon. Made skin & skeleton.

C. Koford
1957

Marikina goeffroyi

January 4, 1957

Barro Colorado Is., Canal Zone

Remington Kellogg reported seeing 2 near TB 7, & possibly a third (or four us).

20 April 1957 Several people from Barro Colorado have told me of seeing them in the hills near the road to the hills.

2 May 1957 Found one dead on road in Madden Forest, C. Z.

4 May 1957 In yard of house 52, San Jose, a mango tree with at least 3 at about 5 p.m. (reported by me Koford).

C. Koford
1956

1

Aotus trivirgatus griseimembra

December 27, 1956

Barro Colorado Is., C. Z.

About 8 p.m. heard crashing in Cecropia 100' N. of Kitchen & saw one in lower branches, apparently eating long flowers. It jumped from branch to branch quickly in moving away.

Caluromys derbianus

November 11, 1956

Barro Colorado Is., Canal Zone

Bocanegra found one near banana trees & brought it in in net. Very fierce acting. Always attacked rather than retreating. Bait in the hand weak. Cut off a right rear toe $\frac{Q}{RR} \frac{I}{II}$ & released in p.m. in fruit tree. It stayed 10 minutes. Then went to tip another branch & jumped 7 feet down to grassy ground. Ad. ♂, testes about 9 mm. diam. each in blue-gray sacs. Tail about 15"; distal half white. Weighed 295 gms. When grabbed gave repeated shrill squeal. In sack climbed up. Did not seem to seek dark retreat. Took photo in tree.

December 26, 1956. Had long good look at one in lower branches of Cecropia just S. of Chapman House about 8 p.m. A Didelphis in tree at same time. Eyeshine of both yellowish white.

January 9, 1957. About 7 p.m. saw one (+ 2 Didelphis marsupialis) in Valsa to S. of Chapman House. Climbed mainly up branches.

January 12, 1957. Saw one in Valsa to S. of Chapman House. 10:45 p.m. saw 2 aft. ...

Chironectes

August 21, 1956

B. C. Island, Canal Zone

8:30 p.m. at Lutz Stream on ~~Donato~~ Donato Trail (H. Mr. D.C.I.)
looking for frogs. One water paramecium swam toward me in
6" deep water to distance 5 yds, emerged so that I saw back
markings clearly, + went back upstream. Enders⁽¹⁴³²⁾ thought
not on B. C. I. Red eyeskin, bright.

Didelphis marsupialis ^{cauca} ~~etensis~~ O. A. Allen
Metachirois opassoni ?

August 1, 1956

Barro Colorado Is., Canal Zone

Last evening about 9 p.m. I saw one (apparently this) in branches of a Cecropia mexicana near AZM house. Red eye shine. Ran about branches easily, rarely using long tail around trunk. I set a live trap on fallen breadfruit tree (fell about July 20) nearby, baiting with banana, & caught one this morning. Weighed 700 gms. & had at least 3 young, naked, about 40 mm. C-R length, in pouch. Blackish long hairs most pelage, grey short hairs, brownish belly. Tail white distally & coiled. Remained toe 5, FR (front right ^{lateral} posterior). Released at fallen breadfruit ^{nest} tree 100' N of AZM house. A similar trap set evening but no catch by 8 a.m. Aug 2. A. Evening Aug. 1 I saw similar in Hydrocotyle terrestris SE 100' of Barro Colorado house. Red eye shine. on 4" diam. branch 20' up, beneath crown. Very long naked tail hung straight down, white distal 1/2 or +. In dark more not long appearing. Appeared dark pelage above, light below.

November 4, 1956 Live traps set near log at LMI took one small ♂. Had 3 small ticks tail. Weighed 235 gms. Clipped R F (711) toe. Released at Barro Colorado.

November 25, 1956. Trapped ♀ weighing 1025 gms. on Lutz at Short Cut to Molino. Pouch empty. Outer R foot toe gone - the one marked Aug. 1 apparently. Tame compared to Caluremys.

December 3, 1956 This is commonest carcass on road between Sambova & Balboa, sometimes 3 in that distance.

December 26, 1956. Saw one in Lulsa S. of Chapman House in evening.

January 2, 1956 Saw one in same Lulsa. In descending trunk it met ascending larger one. Red eyeshine.

January 12, 1956. Saw one in Lulsa S. of Chapman House. Same as 10/26.

Didelphis marsupialis

17 March 1957

Barro Colorado Is., Canal Zone

Ann Mc Baluatz took one in live trap at Fuentes House.

It was a ♀ weighing 1250 gms., including several young in pouch. One young weighed 9 gms. + had total length of 108 mm. Hairless yet. Easily pulled from nipple.

1

Bradypus griseus

July 10, 1956

B.C. Island, Canal Zone
Cigene Crenmann called my attention to one in top of
tall Bombocopia 50 yards E. of Old Lab. Wilman
said it was there about a week ago.

July 12, 1956. About 6 pm one dropped out of Acrop-
ia tree 100' W. of Kitchen. Wilman thought it was one
he had photoed in captivity & released about 6 weeks
ago. He thought it originally from B.C. Island. I cut off
posterior right front toe (of 3), & painted left side of
back white (enamel). Bocanegra hung it back in same
tree. When held & arm pulled, sloth pulled claws back
against forearm & brought foot forward as if to scratch.

July 18, 1956. About 6 p.m. ~~one~~ same one seen near
top of smaller Cecropia 100' NE of first. Paint & missing claw
visible. It hung by hind feet & scratched at head with alt-
ernate strokes of foreclaws, keeping this up for several
minutes at least. At 7:20 p.m. ~~It~~ it was on a branch
in top of same tree. Howler monkeys 50 yds. from it, moving
in trees but not calling.

July 19, 1956. Sloth gone from these two trees.

July 31, 1956. Painted sloth said to have been seen in Cecropia 100' N. Kitchen
yesterday, & another in Cecropia 100' NW of Kodak House.

August 1, 1956. Saw the one near Kodak House about 6 p.m., & again
about 8 p.m. Red eye shine, but small dull eyes. Responded to whistle
by turning head. Much green algae on this one. At 8 a.m. ^{Aug. 2} in same tree,
10' distant, hanging by one arm or foot.

Aug. 7, 1956 C. W. Wetters saw adult & small baby at
Barbours-Lothrop 1.7 about Aug. 5. Wilman had baby from Paramo, and Nord.

Bradypus griseus

August ~~11~~^{11.5} 1956 11/1956

BC Island, C. Z.

One in Cecropia over A 2 M house all day, at watch, not moving. Rain from noon on. This marked July 12.

August 12, 1956. One, large, in 50' tall pinnately compound leaved tree 100' NNW of NW corner New Lab, near top branch in well-leaved tree. Afternoon of Aug. 14 still there, within 10' spot.

August 14, 1956. One in spindly Cecropia 100' NNW of Kitchen at noon, evening, & in morning Aug 15. Apparently not feeding or active. Much rain afternoon of Aug. 14.

August 22, 1956. One reported in same tree.

August-September 1, 1956. None seen this tree or vicinity today or Sept. 2.

September 4, 1956 Same one in tree (Cecropia, same ^{tree} as July 12).

October 2, 1956 None seen near clearing for past 2 weeks or more. None reported or seen by October 23.

November 6, 1956 In heavy rain ^{was} at WNW 3 saw one climbing 7' diam. vertical tree, only 5 feet up. Possibly the marked one.

December 22, 1956. at TB 8 1/2 at edge clearing to S. of trail, one at crotch of tree, 30 ft. above ground. Well developed black & white patch on back. Moved head round in response to whistle. Still there 1/2 hour later (11:30^{am}). No Cecropia seen near, but fig prominent.

December 26, 1956. One in late afternoon on ground near 1952 Bldg. It finally hung in lime tree near kitchen.

Took it down & broke off inner ~~fore~~ claw of left forefoot
 1 11+ 11R. Weighed 7 lbs. No patch on back. 10[±] moths seen on fur & a few collected. A large tick also taken from wrist. We replaced in Cecropia near kitchen.

Bradypus griseus

December 27, 1956

Barro Colorado Is., Canal Zone

About 10 a.m. one in apparent Bombay 300 yds. NNW of 1952 Bldg. Stayed in upper branches at least an hour, apparently feeding. Had white mark with medial black stripe on back. Seen by Mr. & Mrs. Stappenbeck, who showed it to me.

January 9, 1957. At Summit Gardens one in cage. It came 10' across ceiling wire when we arrived. It reached out one arm & put claw in fur of back of a marmoset. Patch on back indicated ♂.

January 10, 1957. About 1 a.m. saw one male in top of big Bombay cypress to E of Bombay house. It was with many leaf buds but fruit was not yet.

January 12, 1957. One in top of Bombay with fruit. But no leaves near TB ¹⁰ 7' 10". Some more near TB 5' 10"?

19 January 1957 One in top of near bare Bombay 400 yds. NNW of 1952 Bldg. at 8:30 a.m. & 1 p.m.

JAN 26 1957 One low among large shrubs to N. of ZMA House, according to Don Reusing. B.C.I.

6 April 1957 One in top of Bombay at 0110 & 0120.

17 April 1957 I saw one crawling on branch 15' above stream near The Water Hole near Summit, C.Z.

C. Koford
1956

Choloepus hoffmanni

December 12, 1956 Barro Colorado Is., Canal Zone.
at fork of Bitch trail off A/A saw one lying on side on branch of Phylls
dendron growing 20' up side of 1 ft. diam. tree. Did not respond
to calls, whistle, or beating on side trunk but thought asleep, not
dead. (Not there next morning).

December 26, 1956. Warren Sarst saw one he took to
be this near WMW15.

November 1, 1956. I found one dead on road half mile
toward Sambo from entrance to Summit Gardens. ♂.

19 Saturday January 1957 Heard that Bocanegra found one near
S. side clearing nr. Chapman House. || Apparently one nesting
high in tree near 523.

15 April 1957. Paul Johnson gave me one imm. It captur-
ed near Palo Seco about 1 month ago. Kept in cage since. It
was clean but screaming. after 1/2 day without food I
weighed it - 1600 gms. I clipped inner right hind
toenail xll and released near Chapman House. I
took photos. It climbed about 1 1/2 feet up 1 1/2" galvan-
ized iron pipe before slipping back down. Hind claws
clung tightly, forefeet & claws weak compared to Brady-
pus.

20 May 1957 One hanging in tree 25 feet above trail near
AVA B at 11 a.m., judged to be not Bradypus.

Choloepus hoffmanni

~~November 1, 1956~~

~~Found one dead on road half mile toward Santa Ana from here
with Barbours a trace. To apt. to at~~

Tamandua - polaris

1 February 1957

Barro Colorado Is., C. Z.

Saw one about 4 p.m. in tree at WNW 11. Paid no apparent attention to ~~people~~ ^{people} 15' below + 30' distant. Seemed to be moving or licking small insects (ants?) from branches.

12 February 1957 In afternoon ~~one~~ ^{one} ~~seen~~ ^{seen} ~~near~~ ^{near} ~~SM 1~~ ^{SM 1}.

26 February 1957 I saw one ascend ~~near~~ ^{near} WNW 13.

Pectoral nipples enlarged, probable ♀.

4 March 1957 In evening I saw one in a 15' tall ~~tree~~ ^{tree} on the ~~near~~ ^{near} ~~shoreward~~ ^{shoreward} side of North Island. It appeared to be in good health. A week ago a visitor told me he saw one on this island. Did a boy put it there, or did it come 50 yds. of water to reach the island?

27 March 1957. I saw one climbing 2" diam. tree near AVA 12. David Sonneborn saw one near WNW 9 1/2.

30 March 1957 I saw one ~~climbing~~ ^{climbing} ~~on~~ ^{on} ~~the~~ ^{the} ~~tree~~ ^{tree} ~~near~~ ^{near} ~~AVA 12~~ ^{AVA 12} ~~at~~ ^{at} ~~4:30 p.m.~~ ^{4:30 p.m.}

5 April 1957 One feeding on ~~ground~~ ^{ground} ~~near~~ ^{near} ~~AVA 12~~ ^{AVA 12}.

3 May 1957 I saw one climbing tree at BL 1. One of right forelimbs injured or missing. Rather small size.

7 May 1957 ~~saw~~ ^{saw} one about 100 yds. E. of Big Tree near JVT 5.

1 June 1957 I saw one ~~ascend~~ ^{ascend} ~~the~~ ^{the} ~~tree~~ ^{tree} at ~~WNW 9~~ ^{WNW 9} about 9:30 a.m.

C. Koford
1956

Dasyops novemcinctus

September 15, 1950 Barro Colorado Island, C.R.
About 10 a.m. saw one near Silver Creek at start of Gardner
Lathrop trail. Nosing into holes & beneath leaves, very
busy. No smell noted.

August 8, 1956. Notes of Carl Rottenmeyer. Three young
about 50 meters E. of JVT 2.8 at 8 p.m. About half
length of adult size. At 11:30 p.m. one adult about
50 meters N. of JVT Big Tree.

October 27, 1956 at Donato 2 1/2 a large dead one in
trail, little meat left, smelling badly.

22 January 1957 In evening about 5:30 p.m. one dug under
a drying pile of loose grass near E. end of Test Table Bldg. When
alarmed it suddenly dashed out & down the slope toward creek.

24 January 1957 Murl Deusing saw one near SM 1 or 2
and tried to catch by tail.

~~1956 8 8 NVP~~ JAN 26 1957 Early in night W.C. Lundy saw
one near AVA 5 1/2.

31 January 1957 Saw one near AVA 8, one near Test Table
Bldg. & (same?) later near 1952 Lab. Roost under loose veget-
ation with nose. Can run very fast in alarm.

21 March 1957 P.G. Hawes found one, fairly fresh but eaten
except for shell & one foot, on Armour trail.

28 May 1957 Saw found dead one on trail near TB 1.

Proechimys semispinosus
spinosus

Rat - 450 gms - brown above, white below,
♀ 1808

July 19, 1956

1807 CBK. 1808 CBK.
Trapped ♂ about 8 p.m. + ♀ same trap 10 p.m. at mouth of
Lutz Stream. ♂ with plug of semen in penis. ♀ apparently lact-
ating. Taken in Schuyler trap, Barro Colorado. ♀ had inguinal pair
nipples plus 2 on each side between legs, high on side in area of
brown color. Stomach contents pale green + white, mushy; frog
vents small.

October 22, 1956. Dr. Robert Enders wrote that he was
interested in how many lost tails between marking +
recapture.

#2 October 23, 1956. Trapped on by 2:30 a.m. (Oct. 24) in
forest about 75 yds. SE of Chapman House. Held till
noon Oct. 24. Marked $11 \times 1 \frac{1}{2}$ by toe clips, #2, #1, toe too
small to clip. Had 5 ± fleas, 20 ± mites. Ate a few
mites in 70% ROH. Released at site capture. Released,
stayed at spot for $\frac{1}{2}$ minute, then away with high
bounds + into grass. Tail intact. No disfigurements
except slit L. scapula. Ate bread in cage. Easily
handled in cloth sack. Can push + scratch hard
with hind feet. Wt. 488 gms. ♂, testes abd. Penis
+ anal region + scrotum not dark pigmented. In sack
made soft crying sounds. (this sp.?)

August 16, 1956 Carl Rettenmeyer notes. One, at 6:30
p.m. in hollow log at Donato 3.5, 14" diam., open end
on trail. Same place 11:30 p.m. Apparent adult.

January 12, 1957. About midnight trapped ♂ in large pine tree
near SW1 at side road by using a net. Saw one
under log earlier. This one photos in aquarium. Same as

Proechimys semi spinosus

January 13, 1957

Barro Colorado Is., Canal Zone.

Handled & lifted - did not bite. I could not get it to move. Killed the rat. Remains showed testis 27×12 mm. Tail 195. Hind foot 52 (color black). I had 31 red chiggers on my arm. Remains show it *Trypanosoma*.

31 January 1957 I am sure Right of 29 January a ♂ taken by Bocanegra, without a tail.

This I killed this evening; a large ♂.

Fcto. ♂ 5001 I trapped one 30 yds. S. of Chapman House in live trap with corn bait. It had torn off right hind foot, thus $\times' \times$. I clipped one side shorter. Tail 170 long. Weight $309\frac{1}{2}$ gms. Had fleas, lice, chiggers, & mites; saved a few. Testis about 30 mm. long, by palpation. Released, it walked slowly away, tail held about horizontally. I had picked it from cage with bare hand. A sneeze from my wife caused it to struggle much. Later it struggled & scratched when I accidentally struck its nose. Claws sharp. It seemed to tolerate plucking of ectoparasites from nose, ears, & eyelids.

2 May 1957 Inside Chilobillo Cave, perhaps in dark tunnel, I saw a large one crunched on floor.

Mus musculus

12 January 1957

Barro Colorado Is., C. Z.

Caught one in 1924 Bldg. ♀, vag. imperf., 144-66-21-13,
13 gms.

Rattus rattus ?
~~Proechimys~~

♀ 1803

July 19, 1955

Barro Colorado Is., Anai Cono

Took 2 in Schuyler traps in Old Lab in evening. Banana
bait. Put up as skins ♀ 1803, Upper. imm. 5 then similar,
discarded (405 - 220 - 58 - 22 mm. Lt. horn 30 x 3, gray).
August 1, 1956. Saw one in Bureau drawer in Old Lab. Apparently
used old paper as nest.

Sigmodon hispidus

November 14, 1956.

Barro Colorado Is., Canal Zone

In ¹10 traps set in tall grass at Plantation Pt. Took
one ♀ (lost 1 trap). 1838 in SKB lot tag. Apparently imm.

C. Koford
1956

1

Dasyprocta punctata

July 27, 1956

Barro Colorado Is., C.Z.

Carl Rettenmeyer notes two at DC 3.5, one 20 meters each side trail, 10:00 a.m.

July 29, 1956 Carl Rettenmeyer notes. Two young, $\frac{1}{3}$ to $\frac{1}{2}$ length notes, possibly nursing. The 200 meters east of JVT 6. Heads under posterior abdomen of adult. 10:30 a.m.

December 22, 1956. about 4 p.m. saw one at FEL 4. It allowed approach to 30 ft. before taking flight. In last 2 months I have seen one $\frac{1}{2}$ about .4 times near SM $\frac{1}{2}$ to 2, and on Nov. 28 saw one near Wheeler 15 (on shot out to AVA).

20 November 1956 about 9:15 a.m. saw one near Lutz 4. also saw one here in evening about Jan. 3.

16 January 1956. At AVA 8 $\frac{1}{2}$ near Big Trees saw one on ground, then sitting up on hind legs, forefeet well off ground, atop a log. It fled calling loudly.

13 February 1957 I saw one on trail near W.M.U 14 about 10 a.m.

C. Koford
1956

Cuniculus paco

July 27, 1956

Barro Colorado Is., Canal Zone

Carl Rettenmeyer told me that last night he found one freshly killed, skull broken, on trail at junction of San Tyne and Barbours. (V+TB10) Full grown. Presumably cat killed.

August 8, 1956. Carl Rettenmeyer notes. Adult at DC 3 under crown fallen tree at 11:45 p.m.

~~November 20, 1956. Saw one on road cut to Luty about 9:15 a.m.~~

~~Both ears prominent. Walked quickly uphill.~~

~~16 January 1956. Near Big Tree no. A+H 9 1/2 saw one ^{sitting} ~~standing~~ erect on hind legs atop a log. In flight it fled, rolling doudly.~~

11 January 1957. Three poachers caught on B.C.I. Had apparently taken some pacas.

Sciurus granatensis

10 January 1957

Barro Colorado Is., C.Z.

I saw one at J/T 2 on tree trunk. Fairly common seen near SM1, near TB10, on TB28, on an A/A before Big Trees.

26 January 1957 I saw one near trail at TB10.

1 February, 1957 about 1400. I saw one on road near about C-4.

Potos flavus
Kimhagin

B C Island, Canal Zone

July 11, 1956. Wilmer said he sometimes saw one in Acroia or breadnut tree near ^{A Z M House} ~~old Chachi house~~ at night. Potos seen same trees at times. Yesterday Eugene Eisenmann said he also saw one or more Kimhagins near clearing. Wilmer says about 10 days ago he saw adult with 2 small young near ZMA house. He said in April he saw ♀ & small young from Pavarra.

December 23, 1956 Saw one in balsa tree just S. of Chapman House. Bright near-white eyeshine. Furred long tail. January 3, 2, ¹⁹⁵⁷ 1956. In balsa S. of Chapman House I saw one at 9:30 p.m., 20' up in tree. White eyeshine. Didelphis in same tree earlier.

January 4, 1957 I saw one in balsa S. of Chapman House 8:45 p.m., 30' up.

January 12, 1957. One in same balsa about 8 p.m. In spite of light went from flower to flower & put head in. 2 companions said he heard sucking noise at this time. Eyeshine small & bright white. Didelphis in tree at same time. Jumps from branch to trunk, about 4 ft.

15 January 1957. Again saw in balsa by Chapman House. Also in tree 2 Didelphis & 1 Caluromys. Potos seems to pay no attention to flashlight beam - goes flower to flower & puts head in.

31 January 1957. As usual one with white skin in balsa S. of Chapman House about 8 p.m. Two in alverdo NE of kitchen, one hung by hind feet & ate using forepaws. Eyeshine red in some, white in others.

Eira barbara

August 29, 1956

Barro Colorado Is., C.Z.

about 3 p.m. I saw one near on buttress of tree near strangler fig 10 yds. S. trail at SM 4. No alarm at 30 yds. It soon walked away. One (perhaps this species) with white eyeshine near BL 1 about 9 p.m. last night, 50' up in tree over trail.

December 26, 1956. Warren Sarst saw one near SM not far (SM 4?) from laboratory area.

1 February 1957 a scoutmaster reported seeing one between AVA and JZ ~~near~~ on trail from JZ 21.

3 February 1957 Bruce Howell counted seeing and photographing two ~~on~~ ~~at~~ ~~about~~ ~~100~~ ~~ft~~ ~~from~~ ~~the~~ ~~tower~~. ~~near~~ ~~start~~ ~~of~~ ~~FM~~ ~~Chapman~~ ~~trail~~. One dalled on branch, the two seemed to play. High up, perhaps 80 ft.

28 May 1957. I saw one near WMW 11 walking near head of column of army ants.

Pecari
~~Tayassu~~ tajacu
~~Pecaria~~ Collared Peccary

July 13, 1956

BCI, Canal Zone

CW Rettenmeyer of Kansas Univ. told me there is trail on W. side of Wheeler trail at 3 mark. Another near Miller trail, crossing shortcut to Barbours Lathrop.

July 17, 1956. Two tame come to lawn near Dutchman (+ coati too). ~~Pecary says one taken by him as young last September.~~

October 16, 1956 Near Fairchild 12 found an imm dead, ^{large} hole in side, rotting. Attention called by one Cathartes on ground, and stench.

July 29, 1956 Carl Rettenmeyer note. Three at DC 4.3. Tracks + odor TB 8.1.

August 9, 1956 ~~300~~ Carl Rettenmeyer notes. 300 + near DC ~~4.3-4.7~~ 3, ^{6:10 p.m.} ~~west toward~~ DC 4.3-4.7, at 6:10 p.m. 6:15 p.m., 6 downhill to NE; some smaller than others. DC 3.5 one west downhill 6:15 p.m. (ad. with white patch center left side).

October 27, 1956. Along TB smelled peccary + saw tracks. From base of large tree with strangler figs near TB 5 (?) two ran across trail + away, 25 yds. ahead of gp. people. Soft dark amorphous droppings and much pawed ground on trail near site.

16 April 1957 Near Donato + I saw 3 adults with three small young (brown). They snorted + dashed back + forth across the trail 3 times in 2 min. Young followed adults, singly. Young sometimes froze. Apparently eating orange flesh of black palm fruit.

21 March 1957 P.G. Howes saw 2 at A VA 5, large.

C. Koford
1956

1

Odocoileus virginianus

July 18, 1956

B.C.I., Canal Zone

A fat one, no antlers, grey coat, tame, near Kitchen in morning.

Aug. 7, 1956 C.W. Rettenmeyer saw ♀ at Tom Harbour 13.

October 21, 1956. Tame one seen near Kitchen.

August 10, 1956 Carl Rettenmeyer notes, ~~DC~~ TB5.4
one doe 8:30 p.m.

November 1956. The tame doe seen about once a week
near Kitchen, boat landing, or other buildings. It has no tail.

January 3, 1957. Fausto Boranegra says there's tame one only one
on B.C.I. He says mazamas near Fuentes House.

Chiroptera

July 12, 1956

Barro Colorado Is., Canal Zone
(1805 CBK - in alcohol)

Carl W. Rittenmeyer found baby bat a few days ago near New Lab. I preserved it in formalin. July 7 one found on launch at Frigoles landing; not saved. Rittenmeyer says between Lake + Whelan trails on way to Tavern he saw low hole near tree roots + bats going in + out. On July 18 he visited site but saw no bats. 1865 CBK

July 25, 1956 Carl Rittenmeyer found baby bat in Chapman house. Saved in alcohol (1809).

August 15, 1956. About 500 yds NE of Old Lab, a dead tree (Guayacan?) about 30' tall, + bats coming out about 20' up in evening. Long winged + skimmed water. I think they are ^{Noctilio} Deria. Saw also one of Sept. 1.

August 18, 1956 On base of the big Pandanus on Van Tyne trail about 35' on W. side on high on 20 ft. up trunk, resting. Two dead light stages.

August 22, 1956. About 40 at same site. I took 2 flash pictures of some of them.

Sept. 11, 1956. 1/4 grown young found in boat.

October 14, 1956. at Medical Retardment, near Madison Way, they were spraying attic of a damaged iron roofed concrete block house for rats. They were large = Artibeus jamaicensis Phyllotomus. Perhaps 100 in air at once. One killed was only half grown. The men said spraying kept the bats away for a period of time but that eventually they returned again.

October 31, 1956 as usual, half dozen on SSE side of old Zeteb office on wall under eaves near wasp nests.

Banded Nov. 12

M. nigr.	51	517	-	Haskins Bl.
	07	518		"
	07	519		Barlow H.
	07 46-	520		Chick H.

S. ...

Chiroptera

November 3, 1956

Barro Colorado Is., C. Z.

at east side ^{near 3} ~~Donato's~~ dead tree held up by large vines. When struck log two small bats flew out of hollow, 3' above ground. In daylight 6 to 7 a.m. small & med-sized bats over our 5 M near 1 and 2 markers, flying back & forth.

November 13, 1956 In evening went to dead tall tree in water 150 yds. NE of Plantation Point. First bats left tree 5:58 p.m. There were very small & flew very fast down & away. In all about 30 small ones came out of 3 holes in trunk. About 6:05 first large bat out, & about 5 in all; possibly Noctilio. All out by 6:10 p.m. apparently.

November 20, 1956 Put up mist net across BL trail about 1/2.

About 8 p.m. removed a large Artibeus and a small phyllostomid with facial stripes. None in net 10 p.m. At 2:30 a.m. ^{of the} 2 small kind. At 6 a.m. one ^{of} small kind, rather gray. Holes in net indicated some escapes. Probably lost to sleep near net and tend it all night.

November ²² 22, 1956. A net near Kitchen took a Mallosus (coibensis?) about 7:30 a.m. Net near W. end New Lab took a Uroderma? about 8 p.m. Kitchen net took Centurus about 8 p.m., nothing else by room.

November 28, 1956. Put up net on S. side Chapman House parallel to edge of clearing. During night took 2 Artibeus lituratus (two clipped & released) and 3 Chiroderma? Clear evening, then rain; 2 C. and one art. got in net after 10 p.m.

December 2, 1956

Chilibre, Panamá

Visited Chilibillo Caves, which have opening about 200 yds. from road to Colon. Still intact with hundreds of bats hanging on ceiling of limestone cave about 30 ft. high in parts. Clusters

Chiroptera

2 December 1956

Chilibre, Panamá.

of 100± Carollia and 30± Phyllostomus on ceiling. Took a Hocopteryx near the entrance. I visited only one large room + passage to it; doubtless many more passages present. / Visited Mrs. Barrett 3 mi. SE of Isambou + saw 20± Hocopteryx on screens under eaves. Took 3, all ♀♀.

4 December 1956. Took one in net, banded, & ~~released~~ released. Prob. Uroderma (yellow ears) but perhaps Vampyrops (upper middle incisor very long).

5 December 1956. Had 3 nets out, 2 in room shape. Took an Artibeus watsoni about 7 p.m., 2 art. lit. palmarum about 9:30 in same (Lutz Trail). Artib. lit. m. Chapman House 8 p.m. Mr. pumphouse a Diuris ^(= Noctilio labialis minor) at 7:50 p.m. a Chiroderma at 10 p.m. (specimens).

23 December 1956. Went to Sentry Boxes at Orchid Island. Only 5 left, there on Orchid. at least 2 gone from there & all from De Lesseps. Bats in same one as before - big eared type with bald crown. I took all 4. These were clustered together at one point on ceiling.

27 December 1956

Frijoles, Canal Zone

Entered attic of wooden train station covered by corrugated iron & roof. Saw about 5 Molossus (caibensis?) hanging low near corners, & heard Molossus in roof. Several dead M. and about 20 dead (old, mummies) larger molossids on floor of attic. Saved skulls for identification. Droppings appeared to be old.

3 January 1957 an old mist net placed across SM nr. 1 and tank clearing took 2 batons 2 artibeus lituratus, 7 artibeus

Chiroptera - Gen'l

January 3, 1957

Barro Colorado Is., Canal Zone

jamaicensis, 5 Vampyrus naja, 1 Uroderma bilobatum, and 1 Artibeus watsoni between 7 and 9 p.m. Net near Allee Cr. House took 1 Myotis nigricans, 1 Malurus coccineus, & by morning 1 Uroderma bilobatum. Old net near Chapman House at edge clearing took 1 Artibeus watsoni in morning. Most large bats came into first net when one held and squeaked much - a regular rain of bats, many escaping net after hitting it or becoming only slightly entangled. // In net set Jan. 2 eve near New Lab took 2 Carollia perspicillata (banded & released), & in a.m. took 1 Carollia castanea (CBK specimen). All low over grass & Piper near shrubs.

January 12, 1957. Took a few Carollia from 15' E of Tree for examination. Banded some & released at Lab.

January 12, 1957. Net near the Lab took 3 Carollia & 5 Myotis - Myotis from 15' E of Tree. Banded & released some. Banded others. Brought a Natalus? in hand net at 5:41 p.m. 6:30 p.m.

29 January 1957 Took a small Myotis in mist net near clearing near 1952 Lab.

13 February Took a Carollia & a Glossophaga? during night in net near edge clearing near 1952 Lab. Two other large nets yielded nothing. Netting much less productive in clearing than in October and November.

31 March 1957 I put a mist net on trail at L. H. P. by 4 p.m. an Artibeus ♀ and a Carollia ♀. In morning a Glossophaga bilobata too.

5 April 1957 Visited Fort San Lorenzo & took 2 species of fold bats in old chambers, & many bats (3 sp.) in sea cave under fort. With David Hornsblom.

Koford
1957

5

Chiroptera - General

17 April 1957

2 mi. N. Summit, Canal Zone

Mr. Bouche showed me an old mine tunnel at Sardouillo Mine, reached by $1\frac{1}{2}$ mi. hike from Gaillard Highway. More than 1000 bats in cave. Mostly Carollia (some with juvs.), many Lonchophylla (with juvs.), and a few Diads Chilonycteris.

9 February 1957

Portobelo, Panama

Due + I went with Col. Glodell in army LCM. In room of old fort I saw about 6 bats + captured 2. About 10 escaped from coco palm, from foliage. About 6 small leaf-nosed (= Microonycteris?) seen in small arms of cave in highest part of an old fort on hill.

Gambou, C.Z.

1 May 1957 Investigated 10' diam. pipe tunnels 200' + 300' long at Core Drilling warehouse of Dredging Division (near golf course). Found 100+ Carollia and many Glossophaga in these tunnels. Myotis nigricans in warehouse bldg.

2 May 1957 With Charles Hanley visited Chilibillo Caves Chilibillo, Panama. Found thousands of Carollia peropinnata,

500 ~~not~~ Phyllostomus hastatus, 300 Pteronotus, 300 Glossophaga, several Lonchophylla, soricina, several Desmodus, and a few Saccopteryx leucivata.

1 June 1957

Barro Colorado Is., Canal Zone.

Dr. Sally Hughes-Schneider told me that today she saw a snake swallow a bat. As she passed a termite nest near 526, a coiled up snake fell out of a termite nest next to the trail. The snake was about 5 feet long, dark above, light below (Chimera?). Snake was coiled around a bat. Eventually (she watched 15 min.) snake swallowed bat down. She saw another bat go out and in same hollow termite nest.

Artibeus jamaicensis & lituratus

October 30, 1956

November 2, 1956

Barro Colorado Is., Canal Zone

♀ 1824 (A. lit. palm.)

Took ~~♂~~ 1827 in mist net set near Chapman House evening.Same net took *Blasorhoga* ♂ (♂ 1826) day morning. Cve of
or lit. palm.Nov. 3-4 took *Artibeus jamaicensis*, ♂ 1830, ♀ 1831 in same
net in clearing edge clearing. Max height 8' above ground.
Cve Nov. 2 took 3 about 6:45 within 5 min. after settingup mist net at Snyder Molina I. Took 1 by about 11 p.m.
when took down net because bats were wrecking it. No other kinds
taken here, but smaller bats were flying over & around.One adult examined was ♀ with pups 3 wide x 4 high, fore-
arm 64 long, 67 gms (after in cage 12 hrs.), massening,
97-0-20-23 mm. 11 & clipped toes from 7 others & re-
leased them. Flight slow & heavy. One hung up in *Leopix*
immediately. Marks:

LR	RR	Sex	Test.	Scrota	Forearm	A.I.P.
(III)	X(III)	♂	test.	O	70 mm.	A.I.P.
1+III		♂			62 mm.	A.I.P.?
11+11		♂			65 mm.	A.I.P.
111x1		♀			63 mm.	A.I.P.?
1111x		♀	imm.	61 mm.	vag. imperf.	A.I.P.?
1+III		♀	imm.	64 mm.		A.I.P.?
x+III		♂		66	test. ad.	A.I.P.

Imm. dark gray & marked head stripes; minute ear head
stripes & brown. Sometimes chirp-chirp chirp when held
hard. 11 Discard ♂ testis 3 x 3, abd. abdominal; 87-0-17-21,
46 gms. (after in refrig. 1 wk.); dark gray back with obscure
facial stripes; forearm 62 mm.

November 10, 1956 Took during night 1 in mist net at
NE end of 1924 Bldg; three in net at SE side of Chapman House.

a.i.p.

Artibeus lituratus palmarum
jamaicensis
 & A. jamaicensis

November 10-11, 1956.

Barro Colorado Is., Canal Zone


Taken 8 p.m., 11 p.m., 2 p.m., & by 6 a.m. They chirp loudly & repeatedly when held by mesh for extraction. Probably smaller bats usually escape net. Kept these until afternoon of Nov. 11, then

measured forearm, marked, released. Marks as follows:

A.I.P. {
 LR
 11+11 1111 forearm 73 1/2 ♂ testes protruding
 111+1 68 1/2 ♀ nip. 1/2 mm. long. Imm.
 1111+ 64 ♀ Imm.
 LR-top
 1411 111+1 69 ♀ Imm.

all flew to woods, among trees, & apparently landed in trees among branches. About 4 parasites found on wing membranes each (saved).

November 12, 1956. Took two in nets near Chapman House; marked, & released. ^{last eve}

A.I.P. { dorsal-ant.
 LR4 RR5
 ♀ forearm 68. 1X11 111X
 ♂ ♀ " 74 LR4 RR3 1X11 11+11 Vag. open. Nipple , black tipped, 4 wide x 3 1/2 long. // A coati killed & ate at least one in mist net.

November 22, 1956 Took one in mist net nr. New Lab

A.I.P. { about 10 p.m. Marked LR4 RR2 1X11 1X11. Forearm 62. Prob. imm. Released.

November 28, 1956. Took ♀ ad, forearm 72, in mist net nr.

A.I.P. { Chapman House 7 p.m. Toes clipped LR ↑ RR 1411 1111. About 8 p.m., ♀, 71 mm. forearm, toe mark LR ↑ RR 1411 1111. Perhaps nibbled banana hung near net. Also in net a Chiromys (♂ 1863).

November 29, 1956. One in net nr. Chapman House in a.m. ♀, forearm 73, many small ectop. clinging to wing membranes; wt. 62. Marked LR ↑ RR 1411 1111

December 5, 1956. Nibbled one ♂ ad. nr. Chapman House 7:50 p.m. Clipped toes LR ↑ RR 1411 11+1. Test. about 5 mm. Forearm 72. Between 9 & 10 p.m.

$$\begin{array}{r} 121 \\ 45 \\ \hline 76 \end{array}$$

Artibeus lituratus palmarum
and A. jamaicensis

December 5, 1956

Barro Colorado Is., C.Z.

two in mist net on duty Trail SE of Chapman House. One ♀, imm., dark gray, no face stripes, forearm 62; $\times \overset{LR}{\text{||||}} \overset{\uparrow}{\text{||||}} \overset{RR}{\text{||||}} \times 1$. One ♂, no scrotal testes, forearm 72, brown, face stripes; $\times \overset{LR}{\text{||||}} \overset{\uparrow}{\text{||||}} \overset{RR}{\text{||||}} \times$. At 6 a.m. on

December 6, 1956, two in net on duty, 1 near pump house. One ♀, imm., forearm 69, released $\overset{||+||}{LR} 3 \overset{\times ||||}{RR} 1$. / ♂ imm. forearm 61, LR 3 RR 2; had 4 ± mites on wing membranes, 3 flies (2 kinds in ventral fur); dk. gray, poor facial stripes. / a ♀, forearm 61, dk. gray, poor facial stripes, had adult appearing nipples & was saved as 1878cBK (= jamaicensis)

December 9, 1956. ♀, forearm 67, nipples small, well developed facial stripes, yellow tinges. Acted docile. Taken in net nr. Chapman House after 11:30 p.m. last evening. Marked LR 3 RR 3. Had 6 ± mites on wing membranes. w.t. 76 gms. Released. Urethra in air when released.

December 10, 1956. One ad. ♀ with elongated swollen nipples in net betw. Chapman House & loca tree in a.m. (♀ 1883). 1882 & 1884 apparently jamaicensis, being smaller.

December 11, 1956. About 10 p.m. took 2 in net nr. Chapman House. Ad. ♂, tan, facial stripes, testes half protruding, forearm 67½; removed 1 fly & 4 ± mites; marked LR 3 RR 4 5 & released. Another at same time dark gray, poor face stripes, forearm 61½, marked LR 3 RR 4 & released (= jamaic.?). A Carallia in net same time, possibly cowing in response distress calls Artibeus when in hand. Overcast evening & calm.

December 12, 1956 In morning removed an imm. ♂, forearm 61, from same net nr Chapman House. Marked LR 2 RR 1 and released (a Chiroptera also in net),
 $|||+|| \uparrow + ||||$

Artibeus lituratus palmarum
and A. jamaicensis

December 12, 1956.

Barro Colorado Island, C.Z.

1. Took ad. ♀ net SM1 at 7 p.m. Marked LR2 RR2. Forearm 71. Tawny brown. Vag. open. Nipples turgid, 3x3 mm. wt. 82. At 8 p.m. took 5 more 2 or 3 into net while I was holding one, as if squashing attract. Another taken 10 p.m.

A. j. ♀ forearm 61 imm. pelage LR2 RR3

A. j. ♀ 60 " " RR3 [sic]

A. j. ♂ 62 " " RR4

A. j. ♂ 59 " " RR5

A. l. p. ♀ 73 ad. LR1 RR1 nipples 4x3, black tips.

A. l. p. ♀ 71 ad. LR1 RR2 nipples 4½x3, black tips.

Very early in breeding season apparently.

January 3, 1957. In mist net set across SM trail near 1 near water tank clearing took 2 ^{A. l. p.} between 7 and 9 p.m.

♀, vag. pigmented, nipples turgid, 67 gms. forearm 69.

♂, scrot. slight pigm., testis 4, 55 gms., forearm 70. (pushed out & meas. externally)

same net took 7 Artib. ^{A. jamaicensis} ~~lituratus~~ and several Vampyrus vaga.

Net down & remains eaten but in it in early morning.

January 12, 1957. Took 3 about midnight near 2 in mist net. ♀ pregnant, wt. 46 gms., forearm 64. C-R 9 mm. Rows enlarged, 3 mm. diam. Facial lines indistinct. Dil. gray color. No third upper molar, ~~to A. l. p. probably~~. First pregnant Artib. taken.

12th parasitic flies on pelage. " Another ♀ pregnant, 10 lb. C-R 13.

R. row 3½ mm. long with 1½ mm. yellow brown exposure; fat;

58-0-17-22, 56 gms., forearm 64; nipples pigmented, nipples 3 mm. high & 2 mm. at base, & could express clear liquid; red (blood color) exuding from white deep in pinnae; 3 flies & mites. " Another ♀, forearm 62, had 30th fly

A. j. j.

Archie - 1900

January 14, 1957. Larro to Grain Is. Saw 1000
1 mile, 10 to 20 eggs in 5" diameter hole. Saw 1000
85-0-15-23, 44 juv. in 10" hole. Saw 1000 in 10" hole.
Copies to 1000; 1000 in 10" hole, 1000 in 10" hole.
Light, in water and 1000. 1000 in 10" hole, 1000 in 10" hole.
1000 in 10" hole, 1000 in 10" hole, 1000 in 10" hole.

3 February 1957 One ♀ taken in net last night. 65 gms
1 it.
after starved in captivity, forearm 72 mm.; vulva segmented,
nips slightly pigm.; 2 ov. with peric. corpus 2 mm. diam.;
palm.
R.O.v. yellow, $3\frac{1}{2} \times 2\frac{1}{2}$; uterus enlarged as if aborted; nipp-
les turgid \sim , $3\frac{1}{2}$ ⁴ wide \times $2\frac{3}{4}$ ³ high. = lituratus palmarum.

Another forearm $62\frac{1}{2}$, was of testes $8 \times 6\frac{1}{2}$. Stewed, weighed 40 gms.

31 March 1957 By 9 p.m. one taken in net at 7.
Forearm 6 4 1/2. Light brown fur. Tot. len. 90. 60 gms. wt.
Oestoparaster. Much lactical tissue but no milk in.
No emb. L. ov. bloodshot. Nipples pigmented, 5 wide
x 4 high, flaccid, naked 3 mm. area around.

2 May 1957 with Charles Handley visited, at Madden Wye, C.Z.,
atlet of concrete gasoline storage shed. Corrugated iron roof on
2x4 framing. about 100 large bats (specimens 1949 to 1952,
CBK). Some pregnant, and a few non breeding but large, and some
males present.

Artibeus jamaicensis

January 3, 1957

Barro Colorado Is., C. Z.

Earlier notes on this sp. mixed with Artibeus lituratus palmarum.

Several came into mist net near SMI between 7 & 9 p.m. Examined

7. ♀ nips. min., vag. not pregm. forearm 58. 40 gms. ^{dark} gray.

♂, scrot. not pregm., testis abd. Forearm 61. Wt. 40 gms. ^{dark} gray.

♂ extruded test. 5 mm. (not pregm.) 63 41 Brown

♂ extr. test. 7 mm. long. 60 45 gms. brownish

♂ test. not extrudable. 62 45 gms. gray.

♂ extr. test. 8 mm. ; forearm 63 ; 45 ; Brown-gray

♀ no pregm. nip. or vulv.; nips min.; 62 41 Gray

January 12, 1957. Loss of 32 individuals of Artibeus jamaicensis / lituratus

marked by toe clipping Nov. 2 to Dec. 12. No returns. Possibly lethal.

C. Koford
1957

Artibeus cinereus websoni

January 3, 1957

Barro Colorado, C.Z.

To now all taken male specimens; data in catalog. Took 2 in night in mist nets. One ♀, starting repro. activity apparently (specimen 1897). Discarded ♂, grayish & prob. immature; measured 51-0-10-16, 14 gms., forearm 38. Testis $4\frac{1}{2}$ by 3; no apparent sperm shown by cutting.

C. Koford
1956/7

Carollia perspicillata

January 2, 1957

Barro Colorado Island, C.Z.

Took 2 by 8:30 p.m. in nets near W. end of New Lab. These bats must have been among shrubs + within 5 feet of ground. ♂, testes about 5 mm. long, forearm 44, marked by clipping L toe #1, \uparrow 11X. ♀, imm., forearm 43, clipped L toe #2.

25 January 1957 One taken in mist net near 1952 Lab. ♂, 15 gms., testes 6 x 4 mm., penis slightly pigmented. Not saved.

16 February 1957 Two taken in mist net near 1952 Lab. ♀, forearm 43½, wt. 17 gms., vulva + anus mod. pigmented, nipple unpigmented and ½ mm. long ~; 1 emb. C-R 8 mm.; ov. 1½ x 2 mm.; 6 ± hair-like worms on or in embryonic membrane; 12 ± worms in abd. cavity, loose; many pimples around anus and vulva, + when squeezed white grease oozes out in 13 loops. Other does ♀, forearm 43, 17 gms., vag. + anus slight pigmented; nipples low ~ and not pigmented; no emb. but uterus enlarged + yellowish; 5 ± hair-like worms in abd. cavity; 2 flies in fur. I sent abd. worms to Dr. M. Voge, UCLA.

31 March 1957 9 p.m., one in net at B.L.O. No emb. but one yellow follicle in L. ovary. Vulva mod. pigment. Nipples pigmented but ½ mm. long + wide only. Wt. 18 mm. Tot. length 63 mm. Forearm 42 mm.

5 April 1957 at Ft. San George I found a group of 3 ♀♀ 1 ♂ in old dark tunnel on S. side of highest level. ♀♀ pregnant. One more escaped. All one bunch. In Sea Cave at below cliffs at N.W. side, off to there were

Carollia perspicillata

5 April 1957

Ft. San Lorenzo Canal Zone

200 m +. One nest in passage 100! & nest in 50! nests



about 10' 8' above ground in passage, 7' to ceiling. Nests
in irregular cavities in side wall in
ceiling. ~~Simulium?~~ ~~Simulium~~ ~~Simulium~~
some water. Wet place, after rain. (I found
a Natalus and Not nocturnal in same cave).

Some C.p. imm., ~~as many~~ pregnant ♀♀, none
0707. ↓ captured 1 large juv., 9 ♀♀, 0 & 0 0707.

Juv. ♀ 9 yrs. - from 31 mm. - well haired.

♀ 17 yrs. - from 42 1/2 - lactating - nipple
2 1/2 long x wide, with opening; 1 mm y. white 1 1/2

Imm. ♀ 13 yrs. (gray fur) - from 42 - nipple 1 mm y. white 1 1/2

Ad. ♀ 24 yrs. f. 44 - nipple 1 mm y. white 1 1/2
vulva mod. pigm. 1 emb. C-R 27, black hairy
& hairy haired.

Ad. ♀ 24 yrs. f. 44 1/2 - nipple 1 mm y. white 1 1/2
1 emb. C-R 27 (dark hair follicles dark, smooth)

Ad. ♀ 22 yrs. f. 42 - nipple 1 mm y. white 1 1/2
but to tip head, dark red; nipple 2 mm x 3,
black, flaccid; lactating. Vulva right pigm.

Ad. ♀ 28 yrs. f. 44 - nipple 1 mm y. white 1 1/2
black area; 1 emb. C-R 31 (6 yrs. 4/5
mature + placenta, not), well haired.

Ad. ♀ 28 yrs. f. 44 - nipple 1 mm y. white 1 1/2
2 1/2 mm wide area around. 1 emb. C-R 30, well
haired back.

Imm. ♀ 18 yrs. f. 44 mm. - gray fur. nipple not
enlarged. But blood in uterus & red spot R. ovary
& vulva mod. pigm.

Ad. ♀ 1927 CRK - also 1 emb. C-R 27, haired.

Carollia perspicillata

5 April 1957

Ft. Canaveral Canal Zone

Im. ♂ 16 gms., forearm 41, testis 2 x 2 mm. Long ear.

Im. ♂ 19 gms., forearm 42 1/2, testis 6 x 4. " "

Ad. ♂ 21 gms., forearm 44, testis 9 x 6, scrotal.

Slightly brown fur.

Ad. ♂ 1926 Csk - also long tail.

This is a new record for the Canal Zone.

Microgaster - also seen in the same place.Carollia.

17 April 1957

2 mi. N. Summit, Canal Zone

Visited Sardonillo Mine with Mr. Bouche. Hike up creek + branch from The Water Hole, about 1 1/2 mi. Old mine machinery from 1920 ±.

Tunnel 100' deep, horizontal, slight curve. Ceiling 6-7 ft. above solid floor, but only 4-5 ft. above surface loose mud

and water (strong smell H₂S). Hundreds of green saproxy beamsin water, + several large frogs (Leptodactylus pentad.). Rock walls rough. Starting 10' from entrance some Carollia hang-

ing, + perhaps 500 in tunnel, mostly in clusters on ceiling.

Some tiny young being carried by mothers, but ♂♂ also

present. Deep in cave a few Diria on ceiling and about300 Lonchophylla curata (?). Many parasitic flies on the

bats (sent to Mrs. Thurman, nos. 5005 to 5007). Entrance of cave on hillside under 60' high canopy. I

examined specimens bats but kept none. Info on skins:

♂ 19 gms. - forearm 42 - test. 9 x 6. Testes scrotal, skin naked; penis near black.

♂ 18 1/2 - forearm 42 - t. 8 x 5, scrotal.

♂ 18 1/2 - forearm 44 - t. 8 x 5

♂ 18 - forearm 45 - t. 7 x 5

} penis black but
ft. slight pigment
scrotum.

Koford
1957

Carollia perspicillata

17 April 1957

2 mi. N. Summit, Canal Zone

Fur color varies much, from rufous brown to dk. chocolate brown.

♀ 19½ gms., fms. 44. Lactating. Nips 5w x 3h in naked area 10 mm. wide. Oozing milk. Uterus 10 mm. long (meas. to tip).

with ♂ juv. attached; juv. 5½ gms., fms. 26.

♀ 17 gms., fms. 41. Also lactating, nips 5w x 4h. Vag. mod. pigm.

with ♂ juv. 8½ gms, forearm 36, attached.

♀ ut. 21 fms. 42; lactating easily. Nipples black, 3 x 3 mm. N, in naked area 10 mm. diam.; ut. 17 l. x 7 w.

♀ ut. 18½, fms. 41. Nips tiny < ½ mm., unpigmented.

Vag. mod. pigm. 1 emb. C-R 12. Ut. 20 l x 5 wide (emptied).

♂ juv. - 7½ gm., fms. 29 mm.; well furred, gray.

So smallest juv. fms. 26, ut. 5½. Carried to fms. 36, ut. 8½, out.

1 May 1957

Forest 22, Canal Zone

In tunnel made of 10' diam. steel pipe, 200 ft. long, & another 300 or + ft. long, nearby, perhaps 300 total not including young carried by adults in flight. With Blasorhoge eximia (juv.). Examined many bats:

♀ ad. - nips. 3w x 4 high, lactating; forearm 42, 20½ gms.

♀ juv. hanging on alone - fms. 31, 9½ gms.

♀ ad. nips. 4 x 4, lact. - fms. 42, 18½ gms.

♀ ad. nips. 2 w x 3 h., lact. (black tip) - fms. 44, 22 gms.

Uterus not enlarged; vulva unpigmented.

♀ ~~vulva~~ pigm. - nips. 4 x 4, black, lact.; fms. 43 - 18½ gms.

♀ ad. nips. 3 x 4, lact., black tip, flattened; fms. 43, 18 gms.

♀ juv., fms. 41, 10 gms.

Carollia perspicillata

1 May 1957

Bamboo, E. Z.

♀ ad., nup. 3x3, test.: frim. 43, 20 gms.

♀ Imm., frim. 43, g. ov. fur., 16 gms.

♀ ad., nup. 5x3, test.: frim. 42, 19 gms.

♂ juv., frim. 34, 8 gms.

♂ juv., frim. 39, 10 gms.

♂ juv., frim. 32, 7 gms.

♂ juv., frim. 41, 12½ gms.

♂ ad., frim. 43, t., 8x5mm, 20 gms.

♂ ad., test. 7x4, frim. 41, 11 gms.

♂ juv., frim. 40, 10½ gms.

♂ juv., frim. 42, 14 gms.

♂ juv., 36 frim., wt. 9½.

♂ ad., test. 7x5, frim. 41, wt. 13½, 1 transp. ov.

Only 3 ♀ juv. but 7 ♂ ♂ ! Many still carry juv. when juv. fly from hanging, one hind foot sometimes seems to catch before releasing hold on perch.

2 May 1957 By far most common bat in Chilodrilos caves, Panama, there being several thousand. Many export beans on cave floor, some sprouting. Some carrying large young crosswise when flying. No large solid groups seen.

C. Koford
1957

1

Chilonyrteris rubiginosa fusca

April 17, 1957

2 mi. N. Summit, Caval Zone

Sardavillo Mine (Baedek, Jour. Mamm. 36: 232). See Corollia
perspicillata notes. Near posterior end horizontal old mine
tunnel, clinging to rough roof. Specimens ♂1933, ♂1934 CHK.
Also Lonchocera aurita present. Descended ♂, t. 4X2, 96-22-11-
20, 23 gms. Many parasitic flies (note 5008, 5009; to C. Thurman).

Glossopoda viridis

5 April 1957

7-11-1964

In 9x8' fairly common at 1st & 2nd
from ceiling & continued up to 1st floor
+ 2nd floor. In some at 1st floor at
N.W. side house 501, in a large
one pair. 5 ft. 2 in. 1 ft. 2 in. 1 ft. 2 in.
One pair. 2 ft. 2 in. 1 ft. 2 in. 1 ft. 2 in.
Id. of 10 ft. 2 in. 1 ft. 2 in. 1 ft. 2 in.

21. ♀ 10 yr 2. ... 1/2 ...
... 1/2 high ...
... but ...

$\Delta \cdot 2 \cdot 10^3 \cdot 0.1 = 2 \cdot 10^2$
 $\Delta \cdot 10^3 = 2 \cdot 10^2$

Ad. 27 10, \therefore $35\% \rightarrow 4\%$ $\times 4$
 $\therefore = -111.5 \text{ K}$

...the ...

1 May 1957 Many imm. in two horizontal metal pipes 10' diam. tunnels ⁱⁿ at Core Drilling warehouse, but only about 1/10 of Carollia population. Data on captured:

♀ Imm. from 37, 10 gms.

07 imm. from 36, 10 gms, testis 2 mm.

♀ Imm. from 35, 7 1/2 gr.

♀ Imm. from 36, 9 juv.

♀ Imm. from 34, 7 gms.

Probably adults too active for capture. These taken hanging overhead or sides of O. tunnel.

2 May 1957

Chilibrillo Caves, Panama

Fairly common scattered in caves near Carallia perispiculata

C. Koford
1957

2

Glossophaga soricina

2 May 1957

Chilibrillo Caves, Panama

and in low ceilinged part cave (where old loading elevator) it was most common but none seen carrying young though many appeared to be juveniles. About 300 seen in all.

C. Koford
1957

Lonchorhina aurita

17 April 1957

2 mi. N. Summit, Canal Zone

about 300 in horizontal ~~shaft~~ tunnel of old tunnel, with ⁵⁰⁰~~1000~~
Carallia perspic. (which see) and Diria (few). Some freshly born
young. Ad. ♂♂ present. Discarded following:

♂ 22 gm., fm. 52, testes 4x3 (tiny)

Juvs.: ♂ 3½ gm. fm. 18 - with umbilical cord attached.

♂ 4½ gm. fm. 22 - with umb. cord + bloody placenta^(removed for weighing).

♂ 4½ fm. 25 - no cord or prom. recent scars.

♂ 3½ - 21 - with cord.

Kept ♂ and ♀♀ for specimens (cat. nos.).

There bats in deepest part 100' long tunnel, on ceiling, roached
in solid mass. Disturbed, hung in similar mass of about
2'x3' on ceiling another part tunnel. Nose leaf especially
prominent in young (large proportionately). Kept many
parasitic flies (nos. 5004; to Ernestine Thurman, Univ. Md.).

Koford
1952

Cat: low

Not numbered,
but follows 10

under cut palm leaves (1151-1153)

Nov. 13 Summit Experimental Gardens, Canal Zone

1151	♂ T. 5mm.	Uroderma bilobatum	59-0-17-18	16 cm.
1152	♂ T. 5 skeleton	" "	60-0-17-17	16 cm.
1153	♂ T. 5	" "	59-0-11-18	15 cm.

Nov. 14 Juan Mina Station, Canal Zone

1154	♀ non-br.	Corollia perspicillatus	55-8-15-16	20 cm.
1155	♂ T. 6mm. nip. tiny	" "	59-8-14-19	20 cm.
1156	♀ ov. with 1mm. foll.	" "	59-8-15-19	18 cm.
1157	♂ T. 6 1 emb. 50mm. (total 1.)	" "	74-9-14-20	19 cm.
1158	♀ (35 CR)	Phyllostorus hastatus	133-19-53-53	115 cm.
1159	♂ T. 7mm.	" "	140-20-26-34	140 cm.

1154-59 in hollow tree

1160	♂ im. Molossus bondae?		103-40-9-17	15 cm.
1161	♀ (nip. elong.) nip. short but conspicuous	Dirias albiventer	82-18-17-21	25 cm.
1162	♀ ut. and ov. look sd. nip, uterus;	"	85-17-18-21	22 cm.
1163	♀ ovaries small skeleton	" "	89-17-17-22	22 cm.
1164	♀ (slightly larger) testis 6x4	" "	89-17-17-20	21 cm.
1165	♂ protruding to outside	"	93-21-18-22	32 cm.
1166	♂ T. 4mm.	" "	85-18-17-21	26 cm.

1160-66, also 1171, in attic 1167 shot over river

1167	♂ T. 4 mm.	Dirias	"	86-18-18-22 28 cm. under leaves of
------	------------	--------	---	---------------------------------------

Nov. 15 1168-70 in vacant house 1172-73 coconut palm

1168	♂ T. 5 mm.	Corollia perspicillatus	73-8-14-20	19 cm.
1169	♂ T. 6	" "	74-10-15-22	17 cm.
1170	♂ T. 5	" "	70-10-15-21	17 cm.
1171	♂ im.	Molossus bondae?	104-32-11-15	12 cm.
1172	♀ no emb.	Uroderma bilobatum	58-0-12-18	20 cm.
1173	♀ "	" "	58-0-15-18	21 cm.

—End trip—

100 ft. 100 ft. 100 ft.

100 ft. 100 ft. 100 ft.

Molossus coibensis *

October 23, 1956

Barro Colorado Is., C.Z.

At 5:30 p.m. I strung a mist net 30' long + 6 ft. high over grass at E. side of New Lab. Bats heard in corrugated aluminum roof. at 6:05 first bat in net, then others. about 10 extracted by 6:35 p.m. I made skins of a ♂ + ♀ (1820, 1821 CBK). wts. of 5♀♀ 11-18½ gms. (2 were 12 gms.). wts. of 8♂♂ 12 to 19 gms., 4 being 18 or +. Two still alive 4 p.m. Oct. 24 tho were in refrigerator all night (♂♂). The 13 bats taken by 8:30 p.m. last night. Net visited at 2:30 a.m. + 6 a.m. but no more bats. Put up 3 of these. Myotis under corrugated aluminum roofing + inside attic same building (New Lab).

December 23, 1956. I strung net near W. side of New Lab + took several. One injured by another in log + so killed. Black back, forearm 35, ♀ with nipple slightly pigmented & concentrically (1 mm. wide), 14 gms., measured 95-32-9-13; adult. Others brown + apparently imm. One 10 gms., forearm 33½. Banded ♀, forearm 34½, no. 58-81506. Another, forearm 34½, 58-81505. 504, forearm 34. • ... 503, forearm 35. --- 502, forearm 34. all ♀♀, banded L. wing, #1 band; nipples tiny & not pigmented. Apparently from under corrugated aluminum of roof.

January 3, 1957. One misted next to Alice Creek House in evening. Examined, banded, released.

Myotis nigricans

November 6, 1956

Frijoles Canal Zone

Found one in crack of rafters in Frijoles boat landing Bldg.

November 19, 1956. Saw one feeding under & near shed of boats,

Barro Colorado Is., Canal Zoneanother hanging on rafter, in mid afternoon. Rhynchobius
naso in same shed but hand hang more exposed, while M.n.n.
hang against rafter.corner between eave, 2x4 rafter, & wall on kitchen building, &
sometimes on SE side of Harbours Bldg.; often on Kodak Bldg.

December 5, 1956. Banded a few from attic of 1952 Lab.

♂ 24-46524 ♀ nip. slightly swollen

- 25 nip. elongated but flat & flaccid

- 26 nip turgid and short.

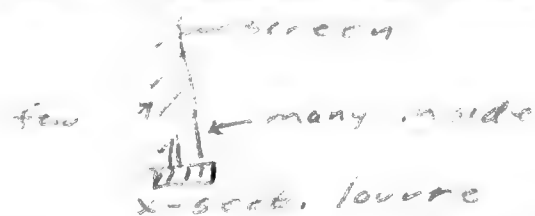
27 ♂ forearm 22 Also some ♂♂ including 5 min-
atures (forearm about 21-30) banded same place. Forearm
measurements 22, 22, 21, 24, 30 on ♂ 24-46527 to 31 resp.December 23, 1956. Netted & banded ♀, nipple slightly elon-
gated, forearm 34½; no. 24-46501; W. end of 1952 Lab.24 February 1957 Found naked young, 40 mm. total length,
on ground near 1952 Lab, alive.Gumboa, Canal Zone1 May 1957 Saw 12± on sides 2"x10" rafters of corrug-
ated iron roof, inside warehouse of Core Drilling section near
golf club. Retreat under corrugations of iron. Knocked down
with a pole a ♂ juv., forearm 29, wt. 3 gms., and ♂
ad., forearm 34, 4½ gms.; testes 4x2 mm.

(Bat Banding)
Myotis n. nigricans

October 31, 1956

Barro Colorado Is., Canal Zone

Under roof New Lab wing. Under corrugations in aluminum roof, inside and outside screen and on outside of screen of screen.



Most had 1 or 2 parasitic mites. These would come right out when disturbed. One taken from head & wing. 4. f. 2. observed several in situ (1 on wing & 1 on head). Had #1 bands, right forearm, males left & males.

Band No:

24-46501 ♂ - forearm 31 long - immature

02 ♂ " 33 1/2 "

03 ♀ 35 ad.

04 ♀ 34 ad.

05 ♀ 33 Back appears enlarged.

06 ♀ 35 " " "

07 ♀ 35

08 ♀ 33 immature

09 ♀ 34 Much cartilag tissue; last.?

10 ♂ 15 about 1 gram. Newly hatched, black,

11 ♂ 32 known.

12 ♀ 35 Tips end; red dots feet & band.

13 ♀ 36 1/2 Tips end.

24-46514 ♀ 34 1/2 Tips end.

Last evening saw 3 hairless young together on lid of old battery can in attic above kitchen. Examined ♀, 4 1/2 gms., forearm

33 mm. Nips 1 mm. long, flattened. No milk. Ovaries pale orange; no smaller follicles; no uterine mass. St. bones turgid & translucent white.

C. Koford
1957

Noctilio labialis minor

December 5, 1956

Barro Colorado Is., Canal Zone

About 7:50 p.m. one caught in mist net 20' uphill (S.)
of lower pump house near Barbours - Lathrops O. ♀, ripening
tiny in naked areas 3 mm. diam. Specimen ♀ 1875 CBK. 40' up-
slope from creek (clear, 6' wide), over open grassy slope.

C. Koford
1957

Pteronotus suapurensis S.

2 May 1957

Chilibrillo Caves, Panama

about 20' above level of creek bed in cave, in a side chamber, the ceiling was thick with 300 (or 1000) of these, light bodied, some red furred and some dull brown. I shot a dozen with one shot shell of .22 caliber. Put up some specimens, & Hardy (U.S.V.M.) did others. When light shined on groups they swayed back & forth, wave-like, over squeaking. I collected a few flies from specimens for Ernestine Thurman (Univ. Md.). Specimens 1943, 1944, 1945, 1953.

Saccopteryx bilineata
bat - vt

August 21, 1956 B. C. Island, Canal Zone
Between buttresses on big tree on Van Tyne trail saw
about ⁴⁵~~40~~ total, ⁴⁰~~35~~ being in one area on S. side tree (w.
spike ladder). (Aug. 18 saw about 35 in same sector
of tree.) Took flash photographs of bats on the trunk.
Two white dorsal stripes.


September 8, 1956 about 40 in same recess of trunk,
about 8 on other parts trunk. Moderately active & alert. Two white
stripes on back (Saccopteryx bilineata?).

October 2, 1956 Saw about 4 on big trees on AMA
(second tree on trail) Sept. 29 and Sept. 22. Today usual
number on big tree on Van Tyne trail, about 30 on
S. side, 8 on SE, 4 on N.

August 22, 1956 Took photos of group between butt-
resses on Big Tree on Van Tyne trail. ($3\frac{1}{4} \times 4\frac{1}{4}$). About 40 bats.

November 3, 1956 Netted ♂ 1828. At least 25 on tree be-
tween buttresses. I saw one with band on wing (sent by Hall
group?).

October 31, 1956 Always half a dozen on wall under
eaves of east end of SE wall of old Fitch office. Odor
somewhat Tadarida-like.

November 3, 1956. There are about 6 on screen under eaves
on S. side of ZMA house today as usual. When perched on
vertical wall tail up as well as nose . 11 saw 3 hanging
3" apart on rafters over boats under sheet metal roof. 11 In
evening saw a banded one on S side of Hoshino Bldg. +
netted it. # 58-81501, ♂, testes protruding. Released.
Took same on SE side Old Fitch office Nov. 12, 1956, + released.

Saccopteryx bilineata

November 22, 1956

About 8 p.m. netted a [♂] on old Zetich office. It died being banded. wt 8 gms., testes 4 + 2½, internal.

November 28, 1956. Four between are pair of leathresses of Bombocopsis near WAT AWA 8.

December 11, 1956. about 7:15 a.m. at Big Tree on Van Tyne trail but saw none at butterfly site where usually 30±, though 3± on opposite side of tree. None on AWA Big Tree #2 either. Leaves now gone from these trees + skies clear much of time - more light so don't roost between these butterflies?

December 22, 1956. Many on the JVT Big Tree. 3 on N. side, 13 on SE, 16 on S. The N. side ones always low, within 10' of ground level.

January 3, 1957. One taken in mist net near Alice Cr. House evening. Banded & released.

January 5, 1957. about 6 seen inside Tavern House, + 1 of another species (= Microonycteris?).

January 10, 1957. Took one from trunk fig nr. DC ½, & 5 from trunk of Big Tree on Van Tyne trail. About 40 on ^{trunk} of this tree, seen in dark recesses only 6 ft. above ground. Two ♀♀ examined & found to have no evidence swelling in uterus, but vulva slightly pigmented. About 4 hrs. after taken, I banded and released 2 ♀♀ and 2 ♂♂ at 1952 Lab. (Bards 58-81509 (♀, 6 gms., forearm 47), ... 100♂, 7 gms., forearm 47, "11♀; 12♂. 100± Phlebotomus flies seen between butterflies below where bats roosted, & many collected by Ernestine Thurman.

January 12, 1957. all in house at Tavern taken (3), with 5 Micro-
nycteris. Two banded & released at Lab. (55-81513, ♀, nipples

Sarcopharyx fimbriata

12 January 1957

Barro Colorado Is., Forest Zone

1 wide x 2 long, pigmented tips, forearm 47, FB-91514 ♀, same but forearm 46.1, ♀ and a ♂ and 2 more similar ♀, all in pigmented mid-vent. Had 50+ and egg 2 and 100+ in egg mass + thick cluster at base tail dorsal; 20+ yellowish eggs in side sacs; banded in ROH. wt. 0.9 gms, forearm 47. Head strong, not swollen, no apparent, ap. o. activity. Lip plates 12 wide x 1 long, black tips.

15 January 1957. I saw about 30 on trunk of Big Tree on Van Tye trail, but none banded.

16 January 1957 at least 2 on outside of screens of Beteln House at end JZ trail (JZ 24). Three in Tower house, with 2 Micro-mystecis (in tin box on floor. None banded.

7 February 1957 I saw 2 in house at Tower.

16 March 1957 usual 40± bats on trunk of big tree on Van Tye trail.

1 April

~~31 March~~ 1957 One ♀ in net at BLO in morning.

8½ gms. Nips pigmented, 1 wide x ½ high. Vulva slight pigment. 1 emb. C-R 13 mm. No ectoparasites.

24 April 1957

[La Jagua Club] + S. I. E. Pacora, Panamá

Captured 3 and saw several others in cavities among fig vines growing on base tree. Also saw 4+ about 6 between buttress another tree. Two on trunk flew down & entered cavity, then smacked out. This tree 100 yrs. SW(?) of clubhouse. Examined those captured. ♀ forearm 47, 1 emb. 27 mm C-R. ♀, forearm 48, C-R 24 mm. ♂, forearm 45, testes 3 x 1½. ♀, nip black, 3 mm. long, forearm 47, 1 emb. C-R 23 mm. Cymbor, C. Z.

1 May 1957 In evening took one in net about 9 p.m. at edge lawn near house 0277.

C. Koford
1957

Saccopteryx bilineata

2 May 1957

Chilibrillo Caves, Panama

I captured one in hand net several yards inside entrance to cave.

7 May 1957

Barro Colorado Is., C.Z.

About 10 one site and 25 another between buttresses of

Big Tree near J & T #. None banded & no juvs. seen. None hanging behind aid Zetis affix recently.

11 June 1957 I saw 9 juveniles alive, each clinging to an adult, on trunk of the Big Tree on Van Teyne Trail. Evidently restricted breeding season as have watched for young since last summer.

Uroderma bilobatum

January ³/₄, 1957.

Barro Colorado Is., Canal Zone

Have taken some (specimens in catalog) in clearing nr. Chapman House. // This ~~morning~~ evening took one in mist net near S.M. 1. Forearm 43, wt. 20 gms; measurements 63-0-16-19. Slight pigment vulva. Nips slightly enlarged; turgid, 2x2 mm., + speckles pigment. Pregnant; 1 emb. 11 1/2 C-R. // Another taken at S.M. 1 in net in evening also pregnant; 1 emb. 20 mm. C-R. Bat wt 20 gms. after died in cage p.m. of Jan. 4. Forearm 43. Vulva lips pigmented. Nips turgid, 1 1/2 x 1 1/2, not pigmented, sparse fur adjacent to nipple. Fur gray instead brown lateral abdomen. Another ♀, netted nr. Allee House. Forearm ⁴¹/₄₃, wt. 18. Larger than previous one (brown). Measured ⁶⁶⁻⁰⁻¹⁰⁻¹⁸/₆₃₋₀₋₁₀₋₁₇. Nipples turgid, round tipped, 2x2 mm., not pigmented, sparse hair around nipples. 1 emb., 10 1/2 mm. C-R. Row. 1.9 long & bright orange color. Are there at Summit Gardens pregnant?

January 9, 1957 In talipot palms at Summit Gardens I took about 5 ♀♀ from cluster of 15 ±. Appeared pregnant. Some roosting singly. I took one - ♂ with enlarged testes. ♀♀ together & ♂♂ single? Wary bats; not easy to take in ^{butterfly} net. Some had mites on wing membranes, & one fly seen on one. ♂ wt. 16, forearm 43, tes. 7 1/2 x 5, no apparent sperm, epid. tubules visible at 7x9 magnif. 1 One ♀ wt. 22 forearm 44 pregnant, 1 emb C-R 14, lgst. ov. 3x2 mm., pale orange. Four other ♀♀ 16-18 gms., embs. C-R 11, 13, 17, & 8, 11, 13, & 16 mm.; nips 2 mm. wide, turgid, ^, speckled, no milk; lips vulva & anus dark gray.

29 January 1957 One flew into lower floor room of Chapman House in evening before 10 p.m. ♀, 20 gms., vag. perf., moderate

Proderus pictus

29 January 1957

Barro Colorado Is. 943 TONC

segment lips white; nips. 2 x 2 mm, laterally flat \wedge , no milk in
nipples (clear fluid exposed, umb. I-R 2-3 x 57).

5 April 1957 at Summit ~~for~~ ^{found} a large ~~wt~~ [♀]
frontal ~~nerve~~ ^{nerve} for ~~analysis~~ ^{analysis}. 7 lactating, nipple
4 long + 2 wide, ^{bluish} ~~black~~, + squeezed ~~dropped~~ ^{white} ~~from~~ ^{from};
much lactal tissue; no anal. and mammary and
uterus normal sized. Pubes ~~region~~ ^{wt.} 18 gms.,
forearm 4.5 g. Took ~~wt.~~ ¹⁰ gms., forearm 4.2
testis 6 x 4 mm. ~~♂ alone~~ ^{♀ with young}.

Mammals - Panama.

7 February 1957

After about 2 weeks here, Robert Anderson & I thought that the population of large mammals (except cattle) is very low. Judged my traps & notes accordingly. He thinks this is due to hunters & raining. To Portobelo, Colon, Panama

9 February 1957 With Col. Blodell and others, Sue & I went to Portobelo for the day (in army LHM from Colon). In room of old fort I saw about 6 bats & captured 2. In a coco palm ^{where} about 10 which escaped. About 5 small leaf-nosed bats (= *Myotis*?) in small arm of a cave in side of highest part of fort.

12 April 1954

4 mi. E. 1 mi. S. Pacora, Panamá.

In evening a man named Bardelmo shot 6 capybaras. Estimated wt. 3 young 18 lbs. apiece, 3 large 45 to 60 lbs. The 3 large weighed 91 lbs. together when skinned & dressed. This info from "log" of La Jagua Sun Club, entry signed by Karl P. Curtis.

24 April 1954

Same [La Jagua Sun Club], Panamá

Visited club with Karl Curtis. Savannas, patches open forest, & low swampy ground. Set 20 snake & rat traps in light forest near clubhouse. Saw many bats in evening & shot a *Phyllostomus*. Took *Chiropterus* from log & *Sorceryx* from tree. Muletas (Lyliogus) said to be here, but I went out for an hour at night and saw none.

25 April 1957 Traps held 2 *Myodontomys* 1 *Marmosa*, and 1 *Oryzomys*.

C. Koford
1956

Birds - general - Panama

Barro Colorado Is.

July 10, 1956 (Tues.)

CZBA, Canal Zone

Eugene Eisenmann of New York here since Friday. He has a full bibliography & many notes on Panama birds, at N.Y. In a tall tree west of New Lab we saw oropendulas using nests (5 there in 1 group, at least 2 seen used). In same tree I saw 3 purple fruit crows - Eisenmann says little known of them tho rather common here. On lake many black terns on stumps protruding above water. On wires at Frigoles so many martins, some grey-breasted and some of a S. Amer. species, fide Eisenmann.

August 15, 1956. Mrs. Carson (wife Dr. H. C. U. Penna.) found a nest ^{with} 2 fresh eggs about 1 ft. above ground in dark forest near a log on Shannon trail (about 1/2). Eggs pinkish, brown cloudy markings, 1 end. ^{Probably} ~~Perhaps~~ an ant bird. It ran along ground; dark on back. She said it had blue ring around eye when first seen.

August 22, 1956. The commonest call in the forest is still the ant-shrike. Many heard on every walk in forest. (*Thamnophilus punctatus*)

September 4, 1956 Groups of as many as 4 ^{*Pteroglossus*} in Cerapies or Nance or other trees at edge Main Old Lab Clearing.

September 16, 1956. On St. Aug. 2B there was a dove, large, orange eye, on flat stick nest 9' above ground & halfway out branch of a citrus tree near ^(Plantation Point) Point of clearing NE of Old Lab. Today nest ~~there~~ ^{done} + no doves there. A large dove, gray back, white on tip tail feathers ~~seen~~ lateral over mainly, I saw several doves in clearing near Old Lab too yesterday.

Birds - ground

September 16, 1956.

... towards ... and ...

The yucca tree near dryer holes 1⁰⁰ in massive
dry lines - brown, and birds, mostly perched, in the
afternoon - a great many. (Some birds are in the garden.)
Yesterday spent out 9 "manana" - bird feeders - placed in
with sugar water inside. These at various points near
buildings in main clearing. One at each of the corners
of the house in room, large & small. Some are near water
garden, that feeding is very in the main garden. From
flowers now in clearing area. The birds are in the
chickens & the birds are in the garden. (Blue-birds are in the
garden in the clearing & the birds are in the garden. The birds are in the
large birdhouse, the birds are in the garden. The birds are in the garden.
edge of the clearing, the birds are in the garden.

September 22, 1956

Gamboa, C. Z.

about 6 a.m. saw about 50 in Amazons in screaming
flock going east over lower slopes of Bamboo hill. Largest
such flock yet seen here. Usually only 2 to 6. / Near Town
on trail saw a juvinal woodcreeper, apparently too young
to fly. Adult came to 6' of young. Both called in same
manner. Straight bill, buff streaks on head + outer
parts, rather uniform brown over rest of bird; throat
ruffed. Feathers visible in tail. A little east of several
rapid water.

October 14, 1956. Saw a nightjar sign over clearing at 6 a.m.

4 100± swallows sitting over clearing immediately to 7 a.m.

October 5, 1956

October 5, 1956 Near Madison, Vt. Coral Cove.
Saw several groups of 30± humblers, especially Anteos, with
long tails, some with transverse band, feeding. (Not Swainson's).

Birds - general

October 23, 1956

Canal Zone

Conductor on train said he saw many hawks near Diablo Heights about 10 days ago. Once he saw great number near Bohio, apparently coming from roost. Barro Colorado Is., C.Z.

October 24, 1956 Left mist net up where set for bats last eve. During day took a Myiozetetes similis imm. + an imm. Sporophila. Banded there + released. In day a Pipra mentalis got in Chapman House + flew against screen (071819). Small yellowish birds, apparently warblers ^{or tanagers}, seen on shrubs + cultivated ~~among plants~~, trees near buildings today. Saw one with metallic near-black back, head + neck black but crown + breast brilliant yellow. Another olive yellow with diffuse gray at tips wings + tail (dorsal). One yellowish with light line over eye.

Canal Zone

October 25, 1956 From Madden Way to near Diablo Heights saw many hawks, apparently migrating east. Most seen over hills near Gaillard Highway mile 9, near Paraiso. Saw about 1000 in one milling bunch near Pedro Miguel gun club, then several bunches of 100 to 200 to near Ft. Clayton. at least 2000 within 1/2 hour. Mostly Swainson hawks, the dark head + throat + pale under wing coverts being apparent, tails rather long + square tipped, wings rather pointed. Perhaps some other birds too (dark beneath, or Buteos). Numbers of turkey vultures circled with the flocks of hawks. The big groups milled in columns 1000' or more tall, rising, then birds glided east. There seen about

1000 - 10000 ... grey ... white sp. -
not ... ?

Birds - General

October 25, 1956Canal Zone

9:30 to 10 a.m. Overcast but not raining.

October 30, 1956 ~~Saw~~Barro Colorado Is., Canal Zone

Saw about 2000 Cathartes^{aura} in 20 minutes from Frijoles area to over various parts of B.C.I. Also 100+ Swainson hawks in one group over B.C.I. 100+ plain-colored tanagers, palm tanager, ^{golden-marked tanager,} yellow warbler, ^{mist} flycatcher, in ¹ net near SW corner Chapman House. Banded most & released.

October 31, 1956. Net up until 2 p.m. Took many

plain-colored tanagers, and chestnut-sided warbler, ~~these~~ - a Belted Cuckoo (specimen), ⁺ green honeycreeper

November 3, 1956. Two Rothenberg's macrorhynchus[?] in mist net, Chapman House, midday. Banded & released. Black terns still over Isatan Lake. Saw 2 Andruia perisylvania on Van Tyne trail.

November 6, 1956.

~~October~~

Saw a Coccyzus americanus in clearing, close, neutral terror. At 8:30 p.m. a large brown woodcreeper (Xipholynchus guttatus?) seen & flushed from under leaves of S. side of old Fitch Office. (Later banded).

November 21, 1956 about 2 a.m. on nearly clear night with nearly full moon heard 3 kinds owls in area of beginning of Lutz and Donato Trails. Apparent Bulweria wuffs; a slurred soft but clear whistle G-A-G and perhaps descending, as heard one night earlier this month; a ~~sk~~ single explosive short burst of whistle quality, note D, occasionally followed by a similar burst about a note higher (like Bubo v.?)

November 23, 1956. Again heard single strong burst about G in early a.m. near start of Lutz trail.

Birds - General

November 24, 1956

Barro Colorado Is., Canal Zone

Much rain yesterday. Sew' caught in net this morning, as if because restricted activity yesterday. Took a Phaethornis superciliosus in net at edge water tank just W. of New Lab, + a Dysithamnus at same time. Did not band P. supercil. as foot too small.

November 28, 1956 Robert Cushman Murphy here today. He saw black tern, laughing gull, and 30± lesser scaup on Gatun Lake in crossing from Frijoles. Many small birds in blooming Scheizolobium (yellow), including tiny hummingbird. Took a Damophila julie panamensis in mist net near Chapman House Nov. 29. This first flock of ducks seen this fall, the first seen within last few weeks.

December 8, 1956 On Big Tree on Van Tyne trail saw a large hawk with black & white bars on wings + tail, with crest of white feathers tipped with black, ~~seems~~ evidently Speotyto melanoleuca. Large parrots in flocks 40 seen over clearing. Crossing from Frijoles saw black tern, and raft of 50± ducks.

December 13, 1956. Saw 20± scaup in crossing to Frijoles. a ~~Sterna~~ Chlidonias niger and 3 Sterna beringensis seen too.

December 18, 1956. The hummingbird feeders continue to give no results. Two are located within 6 ft. of Isertia in front of ¹⁹²⁴~~1952~~ Bldg., but hummingbird feeds only at the real flowers on the shrub. This bush reproduces here and has born flowers continuously since July 1 or earlier.

December 23, 1956 Heard louding call of Zenaidura and saw on a top bare Scheizolobium; first seen recently.

December 29, 1956. One or two heard today & by visitors during past few days (Zenaidura) - the deep louding call. The

C. Koford
1956
1957

Birds - General

December 29, 1956

Barro Colorado Is., Canal Zone

Thamnophilus punctatus

~~Cymbilaimus lineatus~~ still commonly heard in forest, and seen in deep forest (AVA trail). Saw a large owl with white marks around eyes near tower. Two Tityra feeding on Isaura (?) shrub fruits 50 yds. W. of Test Table Bldg.

January 2, 1957. Crossing Fryer to B.C.I. saw 40+ ducks includ-
ing scaup & some with white in front eyes (blue winged teal?).
Female scaup?

21-26 January 1957 In mist nets nr. Chapman House and 1952
Lab I took 2 Florisuga, 1 Damophila, and 2 Thaluraimia
hummingbirds. Tried to keep in cages but all died within 3
hours. I put bill into sugar-water feeder to show bird use.
One was put in large screened room, others in 1 ft. square wire
cages. Tested all 2 1/2 mm. (2 mm. Damophila) in drain, & all 5
were OT.

31 January 1957 ^{hummingbird} taken 9 a.m. died in captivity in room.
Lgst. ovum, 3 mm. diam. 5 yellow corpora lutea. Looked
like Anas but steel blue tail. Possible broad patch,
insects in stomach.

4 February 1957 With Ernest Gruenewalt & Mr. & Mrs. Radman
Ward, Sue & I went by PC Launch "Runner" to Pochea Is.
in Pearl Island group. Hundreds of Fregata nesting in
shrubs on rocky steep shore. We took many photos. One group
of about 60 white egrets in shrubs & trees 100 yds. up steep
slope. Boobies flying nearby, & a few hundred pelicans
perched, swimming, or flying. Large boulder shore with
clear water, many crabs & snails a beautiful coast-
line. Frigate birds could be approached to 5 yds. without
leaving nest. A few with bladders up neck bladders. These

Birds - General

4 February 1957 Pacifica Is., Pearl Islands, Panama
made deep rattle in bladder at times. On opposite side
of Pacifica had mostly gently sloping sandy beach. Adjacent
rocky Parakequia had many boobies & pelicans perched,
but no nesting evident now. This island had much
Cecropia but also spruce cedar, & general aspect was very
dry. Perhaps no water on island. En route we saw large
grey bottle-nosed porpoise about 6 ft, a larger manta-type
ray which kept clear of water again & again. Ray at times
occasional, & 2 or 3 pelicans seen. Many songbirds, quails. The
trip from Mine Dock at Ft. Amador required 5 1/4 hrs. each way.
We mostly into wind on return trip. We caught a gail about
2' long near Parakequia. Colon to Portobelo Colon, Panama

9 February 1957

Leaving Colon to Portobelo in early morning I saw few sea
birds - a few terns & perhaps 2 apparent procellariiforms.
Large swells, & windy. At Portobelo boys said caged eugh-
onias (thick-billed). // We found two nearly fledged
^{Ceryle alcyon} black vultures in a cave at side of high part fort.
Cave 8' high x 10' wide, & birds retreated into arm 2' wide &
4' deep. No regurgitation noted, but hissed. Damp dark
sooty gray. Kason took photos, & I took a Kodachrome
of site.

26 February 1957 On 9-12 a.m. walk saw 3 pairs of large
woodpeckers (Dryocopus ^{and} Phloeococcates), near WMW 4,
WMW 10, and WMW 13.

19 March 1957 There is a nest of blue gray tanager in
small tree near SW corner of ZMA house. Apparently a nest of
palm tanagers with young in black palm at NW corner of

Birds - General

19 March 1957

Barro Colorado Is., Canal Zone

Chapman House.

23 March 1957 at WMW 14 1/4 a mealy parrot in tree over trail eating 2" long green fruit (almond-like bush, fibrous orange within, sticky juice).

26 March 1957 I saw a flock of approx. 100
hawks going over top of island heading NW. These pale
underneath with possible dark band across end of
tail. Broad-winged? About 50 Buconian hawks
seen in another flock. a hot smoky day.

23 March 1951. Planting. I saw two pairs of
hens with adult. They were not in the
area as yet. They were in the area at that time
month.

= old chichi
House

30 March 1957 In evenings an owl called to N. of Albee House, aa oā aaōō'; lasts last one second with one second between. Sharp accent on second syllable.

2 April 1959. This cave maid in Japanese returned to the Cicada region. I heard it again near Japanese figures in early a.m. of 3 April.

3 April 1957 - Large numbers of birds were seen near nesting. Last evening we saw a number of *Panglossia*, in pairs or small groups, some of which seemed to be singing. They were at top of some trees. There were also many nests in bushes in water, for 10 days. I saw one. Watson said they were of *Megascops*.

6 April 1957 a dove nest (large down with nearly fledged young in tree 100+ yds. from shore near N. end of Inland Is. I took 35 mm. can slide. Fast of birds, & above water level on the right of base of island.

C. Koford
1956

Tinamidae

Tinamus major

October 24, 1956

Barro Colorado Is., C.Z.

Heard calling 6:25 a.m., & at 5:55 last evening, from Chapman House.

November 13, 1956 In area 1/2 of Plantation first evening calls heard 5:45 p.m. Nearly always heard in evening in area 100 yds. SW of Chapman House.

November 22, 1956. About 4 p.m. saw one walking up-slope about 50 yds. into forest SSE of Chapman House.

November 28, 1956. Heard one about 50 yds. S. of SM 1 1/2 in evening, another perhaps 1/4 mi. N. of it. Saw one on trail near Wheeler 15 about 11:15 a.m.

December 11, 1956 In vicinity JZ 5 heard several times during overcast day. Usually near Lab heard only 5:45 to 6 p.m. and about 6:30 a.m.

January 4, 1957. Heard at 2 p.m. in forest N. of mouth of Allee Creek. At night heard calling at 10 p.m. (also previous eve) from Chapman House. (Also heard 1 a.m. Jan 5).

January 5, 1957. Saw 1 walk across trail at AVA 5 11 a.m.

23 March 1957 Kinky Hartmann brought in two broken blue eggs. These he found close to base of tree, between buttresses near TB 3 (about 50 yds. N. of, fig tree). Apparently no nest structure. Teeth or claw marks penetrated eggs from outside. Apparently fresh eggs destroyed by carnivore. //

27 March 1957 Last night I heard calling at least 4 separate times near clearing to the N. & S. of Chapman House.

20 April 1957. Flushed one from ground next to creek bed at AH Conrad 2.

C. Koford
1957

2

Timanas

7 May 1957

Barro Colorado Is., C.Z.

at 11 a.m. one flew away from near tree 20' from Donato trail about 4.7. Then another left the spot, running in low squirming fashion. at base of tree between buttresses was a single greenish-blue egg almost hidden by dry leaves. No nest structure. About 2:20 p.m. I returned & photographed the site. Saw no tinamous, but 6' from nest was a snake about 6 feet long. (Back mostly black with yellow areas. Ventrally bright yellow, including head. Head pointed, d.-v. flat, black above, yellow below.)

C. Koford
1957

Anhingidae

Anhinga anhinga

6 February 1957

Barro Colorado Is., Canal Zone

I saw one in Fuertes Estero about halfway in inlet, perched atop shrub in water, & another near mouth of next inlet to W.

22 February 1957 I saw one near N. end of New Plantation Pt.

12 March 1957 I saw one perched in inlet N. of Slothia

5 May 1957

Negres River, C.Z.

Going Gamboa to Juan Meña saw about 5, singly, perched on branches near water. ^{Two} jumped into water & dove out of sight.

C. Koford
1956

Cathartidae

Cathartes aura

October 30, 1956

Pedro Miguel Bay Area

Fresh feeding morning with some turbulence + turbulence. saw part migratory flight of vultures. About 20 seen in jagged area, but gliding there from nearby groups over B.C.D. About 2000 seen in 10 minute period 8:15 - 8:25 a.m. a few hours with some over B.C.D.

24 January 1957 At least 2 flew up from near carcass of a coati put out yesterday afternoon (killed then) and perched 20' up in nearby trees in mature forest near AVA 12.

24 February 1957 Dr. A. Wetmore saw large numbers apparently migrating near Panama City.

1 March 1957 About 8:30 a.m. I saw about 50 flying NW from near Summit Gardens, and about 50 perched in warrain trees (12 in single trees; in the gardens. Other large groups seen between Summit + Pedro Miguel.

3 April 1957 A. Wetmore thinks he can distinguish resident (yellow bands across hindneck + rhomboidal area on crown) from migrant race. He says he has material for revision of Cathartes.



Buteo swainsoni

October 25, 1956

Cana. Zone

~~More than 1000~~ About 2000 seen within 1/2 hour between Madden
Wye and Ft. Clayton. Circling in milling bunches of 100 or
several hundred, then gliding to east (see Birds General, p. 3)

October 30, 1956 Many turkey vultures over Barr. (orads) St.

today. One separate group mainly Swainson Hawks, about 100
milling.

Falconidae

Daptrius americanus


October 21, 1956

Barro Colorado Is., C. Z.

about 3:30 p.m. heard loud hoarse parrot-like squawk to N. of 1924 Bldg. Later it moved to 75 yds. NW of New Lab & I had good view. Called often, sometimes 3 squawks in succession, & very loud. Black breast & white belly. Red around bill.

November 13, 1956 about 8:30 a.m. heard much calling & saw 2 atop large tree 75 yds. NW of New Lab.

16 January 1957 at AVA 8 1/2, east side trail, two screaming loudly at me below, first an apparent ♀, then a ♂ 100' distant and lower, about 40 ft. overhead. Screams like Cebus or parrot, go again and again, for 5 min. +. 19 January found fledgling of Barrocampus near site.

23 January 1957 Near AVA 8 two screaming high in trees, apparently feeding on wasp nest. Nest on side of large branch 80 ft. up, shaped , about 6 ft. long. One cara-hung to trunk and attached nest with bill, knocking off pieces. The raucous calls & fast flight reminiscent of large parrot. Bocanegra says this kind of wasp has "siete casas."

12 February 1957 Near A/A trail about 6 saw 2 calling loudly 50 ft. up in trees. They seemed to scream at people below them.

20 April 1957 Heard one calling near 3 & 2. about 7 days ago heard & saw in same place.

Petelope purpurascens

December 22, 1956

Barro Colorado Island, Quol Zone

In evening one apparently chasing another (intending or?) from
two 100 + 50 yds. east of Chapman House. Call a loud
"queenh" at rate 3 / second. Louder and hoarser when flying.
January 6, 1957. Near JZ 7, Sue Koford saw 3 flying ^{and} ~~then~~
heard calls.

16 January 1957. Mr. Deusing saw 2 fly across clearing near Kitchen.

23 January 1957. I saw 2 fly across clearing NW to SE and land in
trees near boat landing.

29 January 1957 Two flew N. across clearing near boat dock
about 6:15 p.m.

7 February 1957 Heard & saw one 200 yds. NW of 1952 Lot 4 p.m.

16 February 1957 about 6 p.m. two flew across clearing
below Foreman's House, N. to S., landing in tall almondo
on point, one about a minute after the other.

Chita f. 5 - guide 40 - f 10 to 5
- good.

C. Koford
1956

Accipitridae
Leucopternis albicollis

September 16, 1956

Barro Colorado Is., C. Z.

One circling 200 yds. NE of dock 11 a.m., 200' up.

October 17, 1956 at 11 a.m. one perched in tree at edge clearing 50 yds. SW of New Lab. Took photos ($3\frac{1}{4} \times 4\frac{1}{4}$). Two Colinus at edge clearing below were apparent attraction. Hawk allowed approach by me to 100 ft. On a lower open branch of tree.

January 3, 1957. J. C. Goff reported he saw 2 near Lab. I saw one ~~gliding~~ gliding near Clearing Dec. 31, 1956.

15 January 1957. In afternoon I saw one carrying snake in flight above trees S. of 1924 Bldg. Going to nest? Snake dangled, perhaps $1\frac{1}{2}$ ft. long.

26 February 1957 I saw one circling to W. of 1452 Lab.

Pandionidae

Pandion haliaëtus

October 20, 1956

Barro Colorado Is., C. Z.

At 4:20 p.m. I saw one perched on top of snag in lake about 300 yds. NE of Clothier's. Usually saw-ants perch in this tree.

October 31, 1956 4:40 p.m. one perched on same snag. It flew carrying object (fish?) in claw (or claws).

November 14, 1956. One perched in tree near Plantation Pt. about 5:30 p.m., dove into water, flew straight SE across inlet (carrying to nest?).

November 28, 1956. Again saw one, 1/4 mile N. of 1924 Bldg.

December 29, 1956. Saw one flying near Drayton House.

January 10, 1957 Saw one flying over bay near Drayton House.

21 April 1957 L. saw one near same place.

Cracidae

Penelope ^{purpurascens} cristata

July 27, 1956

Barro Colorado Island, Canal Zone

About 6:30 a.m. I saw 1 on lowest horizontal branch of crown of tall tree 150 yds. NW of New Lab. It sat, wailed, & finally flew as another approached it along branch. Pair?

November 3, 1956 Two seen in open branch of large tree west of Donato 3 about noon. No calls heard.

November 13, 1957. In evening at 5:45 p.m. saw 2 in top of 50' tall tree 200 yds. NE of Plantation Point. Last month saw 2 on day near No calls heard.

December ~~12~~ 12, 1956. Two perched about 6:30 a.m. in trees 50 yds. SE of Chapman House, on same limb. One or two seen during day in trees SE of Barbours House. Two seen in trees near JZ 0 to 4, together.

December 13, 1956. In early a.m. about 6:30 two in balsa SE of Chapman House. One calling, whistle sol-la, short, followed by low "ugh" or buzz, about 1 second long. Singly they flew across clearing to NW side of Test Table Bldg. // Often heard about 200 yds. SE of Chapman House.

December 16, 1956. Two in Spondias 50 yds. E. of Barbours House, apparently eating fruit. Remained perched & rather inactive during rainstorm. / Saw one in balsa by Chapman House. // The call followed by low hawk heard in area W. of 1952 Laboratory. The frequency of sighting pairs & frequent vocalizations may indicate mating activity.

December 19, 1956. Two flew from NNW to SSE of 1952 Bldg. & later were seen in Spondias 50 yds. from the Bldg.

Chapman
1957

Jacana jacana

3 February 1957

Barro Colorado Is., C.Z.

I saw one in estero near end of WML trail.

Frijoles, C.Z.

6 February 1957 I saw about 4 flying near shore about 300 yds. before reaching landing at Frijoles (from BCI).


20 April 1957 I saw one in water near shore of Frijoles River just above Barro Colorado Is. There are some small water areas near the river.

5 May 1957 On trip up Chagres River from San Juan Mina, I saw about 100 on weeds in water.

Strigidae
Chironectes

November 2, 1956

Burns Canada Co., C.Z.

~~Although this not reported for B.C.D.~~ Near S.M. 1 about 10 a.m.
 a small owl (litter size) appeared in plain neutral gray
 below seen on vine over bait after whistling call heard.
 Single call, tremulous - especially in last half. I even then
 pass in even sun +  e. Possibly caught at close range
 imitating. Not heard before any more. Birdie was meters
 away at Chapman. Then as I was moving it. Burns
 bird not sighted.

December 29, 1956. Flushed a large one, gray backed, near
 Tower. It flew down trail to S. and perched. Narrow white lines
 around eyes. Flushed about 11:30 a.m. = Pulsatrix

January 4, 1957. Heard in evening and early morning to W. of
 1452 Rd (if the woods sound like me). I also hear Heard
 same whistling call as Nov. 2, to N. of 1924 Bldg.

17 April 1957 of now new bird in house in 1957 under house
 near Burnside. It was seen in the house.

strigidae

Pulsatrix perspicillata

July 19, 1956

BC Island, Canal Zone.

I saw one about 15' above ground under leaf canopy in dark woods 100 yds NW of New Lab about 6:40 a.m. A Monstera near giving met-met-met, ~~but a low roof-roof-roof~~ ~~and too far from bird mother.~~ and deep double coo. No owl voice heard.

October 6 (about), 1956. In evening heard call of 6 low notes, 3/sec., puh-puh-puh, of quality of shaken large plywood sheet. Repeated again & again, 100 yds. W. of New Lab. About a week before heard similar calls in evening 200 yds SE of Chapman House, followed by higher & softer answer of 5 notes, both repeated again & again. This time I thought it might be a large frog or toad. Could be large owl.

October 31, 1956 at 4:40 ^{5 a.m.} ~~one of same calling~~ ~~one of same calling~~ W. of New Lab. Like shaking wooden wand back & forth.

November 21, 1956 2 to 3 a.m. One ^(?) calling repeatedly in vicinity of Donato Yr, apparently high in trees. Little musical quality. Like knocking 5 or 6 times on panel of wood door, last 2 or 3 knocks being gentler than first 3. 3/sec.

December 5, 1956. Heard again 100 yds. NW of Test Table Bldg., about 6 a.m., with apparent answering call.

January 4, 1957. Heard (wooden panel knock) in evening and early morning west of 1952 Lab.

23 January 1957 Heard in early morning N. of Allen House.

19 January 1957 I saw 2 about 20 yds. ^{W.E.} ~~left~~ of AVA trail near 9. Perched 10' apart, 15' above ground, in lower branches trees. About 4 pellets containing bones & hair below perch, suggesting previous use.

Pulsatrix

19 February 1957

Barro Colorado, Canal Zone.

Moderate white excrement on ground. Birch branches about finger-sized.

23 February 1957 again heard the "door knocking" call to W.
of 1952 Lab. No. Cayland's Dec 2nd. A. went to E. E.

Mr. Cantalino Dec 2nd. A. Cantalino Jr.

* 17 April 1961. Same as above but no birds seen. However, you'd better be sure to call in a lot after flight from other nests.

Apodidae

Chaetura ?

July 19, 1956

B.C. Island, Coral Zone

about July 10 ~~see~~ Eugene Osann told me he saw unknown swifts over clearing. Tonight (in evening) I saw at least 5 about 150 feet up in area of New Lob.

October 23, 1956 about 4 p.m. saw 2 swifts high over New Lob. Appeared all black below. Another seen over lake halfway to Frijoles from B.C.I. Headquarters.

Trochilidae

Thalurania forcata

November 7, 1956

Barro Colorado Is. Canal Zone

Have seen one many times at ~~Lantana~~ flowers NE of 1424 Building, & at Malay apple flowers (red) 50 yds. NW of Kitchen (in October). Today took two at different times in mist net near bolsa tree SE of Chapman House. One died in bag in captivity (♂ 18). Other banded #205 on right tarsus & released.

23 January 1957 One taken in mist net near bolsa next to Chapman House. Put in room, & soon after found dead near screened window. 24 Jan took one in net W. of 1452 Lab. Placed in small cage & covered. An hour later dead in cage.


30 January 1957 One taken in mist net & died in captivity within about an hour. ♂, testes 3 mm. diam.

Caprimulgidae

Unidentified

December 1, 1956

Barro Colorado Is., C.Z.

about 100 yds. behind Barber's Paint House flushed one from trail. Pale dusky bands near wingtips 

about a week ago found a dark one with no white on wing dead on road near Summit. Brown + black mottled wing, upper surf.

Caprimulgidae

Chordeiles

Night hawk

September 8, 1956

Barro Colorado Island, Panama

In evening I saw about 5 high over clearing near
buildings, apparently feeding.

Nr. Balboa, C.Z.

~~Oct~~ October 1, 1956. Saw about 5 in evening near Ft.
Clayton.

Cuculidae

Coccyzus americanus

November 6, 1956

Barro Colorado Is., Canal Zone.

About 2 p.m. we searched ~~at~~ 3' above ground in shrub near Chapman House, then in shrub near 1424 Building, on rail down Bonito steps, & finally near at edge lake near boat landing. Could be approached to 30'. Center tail feathers missing giving fork-tailed appearance.

Cuculidae

Crotophaga ani

- October 23, 1956 Barro Colorado Is., C.Z.
 About 9 a.m. 5 in low shrubs 50 yds. SE of New
 Lab; calling much. Perhaps feeding on grubs in old
 log. Saw about same number in vicinity about Oct.
 20, but not previously noted (since July 1 or earlier).
 October 30, 1956 again saw about 5 near Bay's House.
 November 6, 1956. Saw 4 near in trees near Allie
 Stream below Bay's House.
 November 13, 1956. About 5 in shrubs on Mother's Island
 at 3 p.m.
 December 22, 1956. Heard nr. Chapman House
 De January 1, 1957. Several on wires near Allie Creek below
 Bay's House.
 15 January 1957 Saw 1 or 2 sev'l times during day, & heard,
 near Kitchen & Allie House.
 24 January 1957 a few near Chapman House & 1952 Lab.
 21 April, 1957 1 in of 5 ft. near ...

C. Koford
1957

1

Thamnophilus punctata

23 January 1957

Barro Colorado Is., C. Z.

Nest found 50 yds. N of AVA 12, about 7' from trunk of 2' diam tree in 10' tall shrub, 1' from central stalk on lateral branch. Woven of fine black roots, hanging between fork of branches. About 3" diam. & 3 deep. Bird flushed. A ♂ seen 5 yds. distant. Two eggs in nest, apparently fresh. Pale buff with fine to coarse red-brown splottiness, especially toward end. Also seen & examined by Frank W. Preston. Bocanegra said a snake would get the eggs if we touched nest (by smell)! (Next day eggs gone, & I took nest). Nest had ^{fuzzy} fine green moss, chenille-like, interwoven. About 8' above ground. I have seen several similar old nests; this first with eggs ^{seen by} ~~found~~ me (Boca found it). When eggs gone at 3 p.m. on 24 January 1957, the thin shrub appeared unbroken, so perhaps snake or bird took rather than mammal. 2 March 1957 Remains most commonly seen & heard bird in the forest.

Cotingidae

Querula purpurata

July 10, 1956

Barro Colorado Is., Canal Zone

Three seen in tall tree 50 yds. W. of New Lab. ^{Eugene} ~~Paul~~ Ciseimann thought probably nesting nearby. I saw one in waxy red fruited tree 50 yds. NE of this tall tree.

November 6, 1956. Rarely seen near New Lab. last month or more. Today two, one red throated & other not, seen on SM about 4 (near stringer fig), 20 ft. up. Pair?

December 1 (about), 1956. Saw 2, calling much, on AVA near Big Trees (AVA 6?).

December 29, 1956. At AVA 7 saw 2 in Cecropia, feeding, apparently on part of flower. A Phloeoceastes melanoleucos higher in same tree. Both near Alouatta band.

January 5, 1957. Two calling at SM 6, at least 1 ♂.

19 January 1957 Two calling near pineapple thicket 50 yds. E. of AVA 9, & seen. Apparently jay-like squawks and a pleasant whistling call.

13 February 1957 Some rain in night, & many calling about 8 a.m. after cleared. Arthur Fast saw one leave a nest high in foliated tree W. of 1952 Lab about 8:45 a.m. Later he saw several visits, as if adult feeding young. All visits apparently by the ♂ (deep purple throat). Mr. Fast saw visits at 9:03, 9:09, 9:13. 9:25 One to tree & into nest when ♂ came. 9:27 ♂ to nest & ~~stay~~ stayed 3½ min. On edge as if looking in. None by 10:00 when in sun, ~~and~~ ^{any} by 11:30 a.m. 1:45 to 3:45 none came. Building nest? // During next few days Mr. Fast watched but ~~saw none at nest~~ some more

14 February 1957 Fast arrived 8:01 and saw one bird (♀?)

Querula purpurata

14 February 1957 Barro Colorado Is., Canal Zone
leave nest. 8:27½, ♀ to edge nest few seconds. 8:29, ♀ to
edge nest momentarily. 8:40, becoming cloudy. Occasional
rain. No further activity at nest by 11 a.m.

15 February 1957 Arthur Fast observed nest 6:35 to
7:05 a.m., then 7:40 on, but no birds to nest. At 9:18
a.m. two apparent Querula perched in tall tree near nest
for 10 seconds. No activity at nest by 10:30 a.m.

10 June 1957 Dr. S. Hughes - Schrodenthuis nest in Acropia (?)
nest near to Fuentes House has nest of this species. She saw fruit
so crow eat cicadas.

Pipra mentalis

JAN 27 1957 In morning W. E. Lundy saw ♂ + 2 apparent ♀♀ near SM trail near 2, to N. Humming, + flicking of bills heard. A few days earlier Murl Denney heard + saw similar on TGP trail about 8 or 9, across from termite nest on palm trunk.

29 January 1957 I took one in mist net near SM. Bird in room in captivity. ♂, later 3 ♂ + 2 ♀♀. Murl Denney

31 January 1957. Mr. Paul Hawes reported seeing 3 or 4 near 4, about 5^{p.m.} today, displaying, rather tame.

17 March 1957 Mr. Hawes had often seen them again near same site, just beyond edge of a small clearing. He showed me three perches which were often used by the birds (♂ + ♂). ^(near TBI) A single male was on one perch. He has photographed these birds in motion pictures recently.

26 March 1957 I saw one dancing side to side on 15' high branch near SM3. Ramsey Yoder reported 4 ♂ + ♂ at DF3. 1 on 27 March.

12 April 1957 Near TBI I saw 2 males 50 yds. apart on horizontal open perches (3/8" diam.) 15' up. No leaves near perches. No courtship dancing - merely resting. This is a row where Mr. Hawes saw courtships.

21 April 1957 Near TBI 1/2 saw 2 at one site and two more 30 yds. beyond, all males. Displaying on perches 15' above ground + making short vibrating sound (electric spark like) and hummingbird-like sounding flight between perches. Two males on one perch 10" apart. One had long horizontal + head low + sidestepped toward other, which moved away. Repeated. One on perch so was twice joined by ♀. Male sidestepped.

Pipra montalis

21 April 1957.

Barro Colorado Is. C.R.

toward here with tail high & chin near perch, near quarter toward
 ♀. ♀ left. Shaved here in (2) L. P. area, photographs, but he
 took no photos. Above about 9 a.m. about 3:30
 I returned to site and saw 2 displaying in area.

27 April 1957 M. TBI saw 2 ♂♂ 10" apart. One idled
 quartering toward other, which strutted. about 4 a.m. in 100' distance
 along trail. Still courting & displaying.

31 January 1957 P.G. Hovers notes. 3 snapping,
 buzzing, dancing, & using special perches near TBI.

Later a fourth heard.

15 March 1957 all P.G. H. notes. all 4 still displaying.

21 March 1957 P.G. H. notes. Saw one ♂ near SM 4,
 displaying (CBK also saw a few times here).

7 May 1957 I saw two 20 yards apart near TBI, males, on
 open perches 15 ft. up. I heard & saw them buzzing the
 upstretched wings, saw two males in "dance" on same perch.
 She says they call, a high short note or two followed by a long
 note, possibly sliding downward and/or diminishing.

^{28 May}
 June 1957 Sue K. saw & heard them, at least 3, near TBI at
 same site as before.

Myiodynastes maculatus

19 March 1957

Barro Colorado Is., Canal Zone

Nest of sticks on ledge of sealed square window under peak at N. end of Chapman House. Two birds seen perched there morning, but no apparent midday activity.

23 March 1957. None seen there subsequently.

20 April 1957. One bird seen sitting in nest as if incubating.

Chapard
1957

Terenotriccus erythrorus

25 February 1957

Barro Colorado Is., Canal Zone

Notes of Paul G. Hawes. Found nest with 2 white eggs. Nest ball-like, of tendrils, moss, rootlets, dead leaves, suspended by a stem of rootlets under overhanging bank of Ollee Creek in very dark spot, directly beside clear pool. Nest $3\frac{1}{2}$ ' above creek. Overall length 20". Entrance hole $1\frac{3}{4}$ " diam.; could see birds' faces in.

27 February 1957 P. G. H. notes. 3 eggs in nest. Bird flushed; rapidly flipped wings & tail every few sec.

16 March 1957 P. G. H. Eggs still unhatched

18 March 1957 P. G. H. Nest found pulled down, torn apart, left in water. No sign birds or eggshells (coati?),

Hirundinidae

Iridoprocne albilinea

October 23, 1956

Nr. Barro Colorado Is., C. Z.

Saw two near Frizales on & near stump standing
10" out of water of lake.

Koford
1956
1957

Icteridae

Zarynchus wagleri

July 10, 1956 Barro Colorado Is., Canal Zone
Eugene Eisenmann pointed out to me that 6 nests in tall
tree 50 yds. NW of New Lab were being used by oropend-
ulas. This apparently late date of record for young in
nest.

July 25, 1956 No observations extensive but saw more at nests
today (in Ceiba 100 yds W. of New Lab). One in Cecropia over
Barbours House in evening. Later saw 2 nests entered.

August 2, 1956 Saw one enter nest. at other time, one perched on side nest.

August 11, 1956. None seen in area of this tree (the change in
fruiting may have had effect on distribution.).

December 23, 1956. Rarely seen or heard lately, but this morning
one called in Balra S. of Chapman House, flew to Schizolobium
um, again called - bubbling sound.

January 4, 1957 about 7:30 a.m. heard near Balra S. of Chapman
House. 5 flew across to W. to an almondo, perched, & soon flew to N.
2 more flew direct from Balra to join them. Most seen since ^{early} August.

January 13, 1957. About 1:15 a.m. saw 1 in the middle of
Test Table Bldg. seen briefly, then flew to N. at approx-
ext. end of day.

22 January 1957. Saw & heard one at WMW E 1/2. Mr. Rusten
says he saw one there during last few days. I heard a few
at midday about 100 yds. N of Test Table Bldg.

23 January 1957. Mr. Deusing said he thought one was trying to
start nest in Schizolobium over Test Table Bldg. at end of
branch with new foliage. Heard in area 100 yds. NW of Kitchen
during day. One calling from Balra S. of Chapman House about
4 p.m.


Zarhynchus wagleri

31 January 1957

Barro Colorado Is., Canal Zone

Six crossed over Chapman House in evening, stopping in leafy tree. Singing calls. ♂ much larger than ♀♀.

19 February 1957 In p.m. I saw one nest that had been started in jacaranda over SE corner of Test Table Bldg. Apparently all foundation work, about 12" of end of branch being wrapped in blackish fibers.

22 February 1957 In morning two nests at site, well started, the first above mentioned being about 1½ ft. long , upper part including foundation wrapping around branch. This called No. 1, about 20' above level of peak roof of Test Table Bldg. A second nest located 15' east of this = No. 2. Bay somewhat shorter. ♀♀ seen to go into these nests carrying nesting material as late as 6 p.m.

Mr. Hower observed nest No. 1 on Feb. 20. He saw at least 4 other nests in early stages. Occasionally ♂ or ♀ gave loud alarm call and all birds down into low foliage under nest. Used light colored fibers or tendrils, horse hair like in size, up to rootlets with side roots. 9:39 + 9:49 a.m. [♀] ₁ drove off giant cowbirds visiting nest. Arrivals & departures indistinguishable ♀ at No. 1 nest:

Arr. 9:00	:04	:07	:09	:14½	:16	:18½	:24	:29	:40	:49	:51	:51 ¹⁰
Dep.	:02	:06	:08	:14	:15	:18	:21	:25	:31	:45	:50	:51½:10

Carried tendrils, black material, green material, bark strips, rootlets. On 3 trips nothing visibly carried to nest.

Mr. Hower notes of February 21 (extracts): birds working at 6:10 a.m., 5 working, especially 2. Stop work midday, resumed working on 2 nests in p.m., & birds leave before dusk. Considerable ralloing of nest material from absent bird. Battles when bird returned to nest while being robbed.

Zarhynchus augeri

²²
~~23~~ February 1957 (extract P. G. H. notes) Barro Colorado Is., C. Z.
 Mr. Hawes thinks 5 nests started but 3 poor and consist of only a few strands, other two nests progressing.

2 March 1957 The two nests in jacaranda about 2 feet long, nearly upoque. Dr. Walter Clark, photographed the birds here a few days ago (26 Feb.). Now 4 new nests started, in the adjacent Schizolobium. Two to NW + 2 to NE of the farthest advanced nests in the jacaranda.

9 March 1957 The Oreopoda nests now number ¹⁵~~13~~ over Test Table Bldg. - the original two over SE corner, in jacaranda; ^{in Schizolobium} 7 over center of N. side of Bldg., 1 started 20' higher than there over NE corner bldg (possibly another starting adjacent); two more about a ft. long (+ another starting) 15' higher yet, at lower edge of S. side of crown of treetop; plus group of 3 on E side of the ~~can~~ Schizolobium ~~for~~ about halfway up. Three have only part of foundation made, but birds working on nests, so some nests starting at this late date. || Nest material consists in part of long shreds of Ocopia bark pulled from near tips branches by birds with bills.

16 March 1957 Now 20 nests in the jacaranda and Schizolobium over Test Table bldg.

23 March 1957 One of the nests had fallen down, & it had broken at base. Contained soft green dried grass in nest. Given to Paul S. Hawes. || Mr. Hawes also found on 21 March a nest 70 ft. above ground in Boulacopsis to left of AVA 6.8. A few days later it was gone, but some saws found 200 yds. away to left of trail.

C. Koford
1957

Zammarchus wagleri

- 3 April 1957 (in cages) Barro Colorado Is. *Crapaudata* nests were stable but apparently deserted. Two birds seen in the area but no activity seen. Saw one male. In egg case but no eggs in nest, nor active. The large *Crapaudata* nest was not yet the birds. Two nests pulled up over the side of tree.
- 20 April 23 April 1957. Only 17 nests still hanging. Saw 2 *Crapaudata* near nests but they did not come in.
- 16 March 1957 P.G. Howes notes. Over Test Table Bldg. ♂♂ + ♀♀ spend long periods close together, ♀♀ motionless, ♂♂ with bills pointed skyward & motionless for long period followed by bending over shuddering and "exploding."
- 20 March 1957 One nest broke loose, hanging upside down from adjacent nest as bottom woven in.
- 21 March 1957 A finished appearing nest in tree near AVA 6.
- 30 April 1957 Only ¹⁰ nests still hanging over Test Table Bldg.
- 4 May 1957 One of these nests (toward kitchen) may hold bird incubating, as one seen to leave it.
- 1 June 1957 No activity at nests near Test Table Bldg. I heard ♂ several times near AVA 8.

Thraupidae

Tangara inornata

November 3, 1956

Barro Colorado Is., C. Z.

One died in mist net nr. Chapman House. 17 1/2 gm. ♀, imm., skull 4/5 ossified. Several taken within last week there & banded. Apparently all juvs. Feeding in groups 4± on large herbs near edge clearing.

November 14, 1956. Catching a few nearly every day. mist net out, low, near edge clearing near New Port on Chapman House.

16 January 1957. Still common in Cecropia near Kitchen.

@ Koford

Thraupis episcopus

23 March 1957

One on nest in citrus tree next to ZMA house. ~~For~~
Birds here since some time previously (notes by P. G. Hower
or Harriet Burkhardt?).

4

Choford
1956

Trees & shrubs

July 7, 1956

B.C. Island, Coral Bone

Almendo in purple blossom now, a tree with many ^{nut}coated - sized red fruits 75 yds. NW of New Lab has much use by parakeets, Zarhynchus, Querula, & other birds. Many waxy fruits on ground. I collected some. Bulbo Balra 50' S. of Chapman house blooming, & residents (Rottenmeyer) says has bloomed since January. Carl Rottenmeyer says almendo at whole 4. & in fruit about end of March (he saw taya & peccarin there).

July 24, 1956. Today Walter Lindsay, Agronomist of Balboa, visited & identified many trees for us. I tagged about 20 on Snider Melio's trail with numbers (on copper). Possibly the largest trees here are Ceiba rather than Bombacopsis. The orepodula tree W. of New Lab probably Bombay barrigon. The large tree 100 yds. E. of Old Lab & largest tree on island probably Ceiba pentandra (spines on trunk), kapok tree.

September 1, 1956. Many fruits of "markey plum" on ground on Donato. Large seed, 1"; aroid, orange, tastes like logan. Skin & outer parts eaten on most fallen ones. All Almendo blossoms gone. No tree in conspicuous blossom.

September 18, 1956. Pacaranda near Cedar Bridge. Shedding seeds from pods. Saw blossoms remaining on almendo trees. Heliconia of several kinds in bloom.

October 2, 1956. A red flower like lion bunches of firecrackers now prominent on a few leaved shrub about 15' tall on Luty (near 1) and AMA 100 yds. from tower. Malay apple near pumpshouse now has red flowers.

October 23, 1956. Malay apple flowers nearly gone. The

Trees + shrubs

C.Z.

October 23, 1956

Barro Colorado Island, P.

firecrackers still prominent on 10' tall ^{leafless} ~~leafless~~ shrubs, few branches, some spines, in dark woods. No trees in blossom, but almendros in fruit, + some vines flowering (purple trumpets).

November 11, 1956. at several places in forest in dark areas a spindly 10' tall shrub without leaves with tufts long red flowers.

The Schizolobium tree over Kodon House seems to be losing leaves now.

November 20, 1956 The Schizolobium in yellow flower. Many fallen by Nov. 22. Conspicuous yellow in distance. The Malay apple also has flowers (red) in one section.

December 5, 1956. The Schizolobium still in conspicuous flower but losing flowers now. many insects + small birds at flowers. a squirrel cuckoo commonly seen in that tree.

Rather dry, clear, + windy today + yesterday. Start of dry season?

December 9, 1956. Most flowers of Schizolobium now gone. a lilac-like purple flower in bloom on tree at edge clearing, + a vine with pale orange petals and many stamens. The red flowered Inga (?) shrub still conspicuous in forest. "Wings" on stems.

The big Bombacopsis S. of Cartaker's House has yellowing leaves, + a Sterculia 100 yds. SE of it too. Drying up?

Near SM 1 hundreds of figs on ground, Alouatta feeding on in tree, + toucans prominent there too. Many immature blossoms of balia on tree near Chapman House.

December 12, 1956. Claudio Villagra helped me name some plants.

Seeds common on trails are Spondias "nigra"?; apparently eaten

by bats. Red flowered shrub is Inga. yellow + white tassels (many blooming now).

on tree are of Inga paraguayensis. Cluster of red flowers on spring

Trees & Shrubs

December ~~10~~ 12, 1956 Barro Colorado Is. Canal Zone
 tall shrub = Erythrina panamensis. Still blooming at J Z O.
 all leaves & flowers gone from Scheizolaubium near Test Table Bldg.
Bombacopsis has lost leaves.

December 23, 1956. The lilac colored flowers of compound (penicillate)
 leaved small tree still prominent. Seed pods (1). Found near
 short line on Orchid Is. (W. side). On east side Orchid Island
 many Bombax, one with two "powder puffs" already, others
 with some leaves still. Espave half bare - common on W. side
 Orchid Is. Sterculia half leafless with yellowing leaves.
 Big Tree on Van Tyne trail has lost all leaves & has many young
 flower buds, but the one south of Donato steps has half leaves
 still. Red flowered Inga still prominent in forest.

December 24, 1956. Pronounced first day of "verano" by Cheli
 and Oscar Kidd - because wind N. rather than NE. 15 to 20
 MPH, with strong waves & many whitecaps in midday. Andropogon
 and other grasses with heads now.

January 2, 1957. In making circuit of island by boat noted
 high proportion of half leafless larger trees. Flowers rare - the
 lilac-like one near water still in bloom.

January 5, 1957. Many "shaving brushes" now being dropped by
Bombax barrigera at many sites. Espave with few leaves.
Bombacopsis bare. Red Inga still in flower. along canal
 in The Cut, "gallito" (Erythrina) in bloom, & much ^{poro-poro} ~~poro~~
 in yellow flower along Sambo - Pedro Miguel road.

January 9, 1957. Many "shaving brushes" of Bombax and flowers
 of "gallito" (Erythrina) in Sambo area.

January 10, 1957. The Big Tree on Van Tyne trail raining

Salienta - General

August ⁴²² 21, 1956

Barro Colorado Isl., Canal Zone

Information from M. J. Foguette, Jr.

Bufo marinus - Large ♀ Wheeler 14, night. ♀ taken on dock eve Aug. 22.

B. typhonius - very common along trails on ground.

Calling during light rain p.m. Aug. 22 nr. Allee Creek. Larger here than in Pacific drainage C. Z.

Engystomops pustulosus - 1 or 2 heard calling Old Lab. One seen Barbours 3 daytime Aug. 22

Leptodactylus pentadactylus - several heard calling night near Old Lab, near Wheeler 9, nr. Armauer 8.

Eleutherodactylus lunifrons - only frog seen along Allee Creek bed (rocky) near Old Lab. Red eyeshine.

C. diastema - heard common night calling from tall small trees. Whistle similar to Centrolene fleishmani, but higher pitch.

Phyllobates flatator - common along TB trail daytime.

Hyla albomarginata - good chorus night along stream near Armauer 8-9, in "Pita" thicket. Green with red web between toes.

H. phaeota - seen calling near dock night.

H. phlebotus (prob. not underwoodi) - believe 1 or 2 heard near Old Lab night.

Centrolene fleishmani - most common call, at least near Old Lab, night. Call similar to E. diastema. Egg mass found on adjacent leaf. Isolation mass containing wiggling developing embryos larvae.

Bufo marinus - C-V 148mm. - removed R F toe V/H. Taken 8 p.m. last landing. Released at Old Lab 8:15 p.m.

Trees & Shrubs

January 10, 1957. Cero blossoms in forest & one
bush of immature flowers. Leuca in forest. Bud many
numerous in tree & below on ground. The big Bombax sp. SE of
Fremont's house has new leaves coming out. Did not flower
to my knowledge. Last leaves a few weeks ago. The one that
1952 had fully leaved & still a few at last leaves. The
Leuca in forest near Tule Bldg. starting to get new
leaves now. It was almost in flower before last
margined flowers. Red Leuca still in flower in forest.

January 12, 1957. Bombax still dropping mottos. Solid fresh green 19 Jan.

19 January 1957. Bombax still dropping mottos. Few
leaves on Hura. Cyprip fully covered with fresh leaves.
Inga blossoms (red) almost gone. No conspicuous shrub
or tree flowers.

23 January 1957 Crop. since last Wed. 1.45" from
black 4' diam. pan.

2 February 1957 Poro-poro fruits on trees along along PRR
track Ballena to Frijoles. Large Bombax fruits on orchid tree,
O, about 8" long. General aspect of forest top, many bare trees.

22 February 1957 Near Barbours Pt. three bright yellow
flowered trees, perhaps guayacan. Another new across lake
near Frijoles. Many Azeiba fruits on trees, as near SMI.
Few "mottos" left on Bombax. Large fruits on one near J20.
Kapsch-like fuzz from fruits on balsa next to Chapman
House. Red Passiflora in bloom on vine in various parts
of forest. Palo santo (?), ^(= Triplaris) smooth barked slim tree with

Trees & Shrubs

22 February 1957

Barro Colorado Is., C. Z.

6" long groups of pinkish red flowers. Flowers with 5 petals
 about 1 1/2" long. On Slothia the banana tree now in
 flower & with ^{all} new leaves.

26 February 1957

Guayacán (Euphorbia)

Guayacán in bloom, + many flowers
 on ground. Bluish purple jacaranda also in bloom near A & A
 and JZ trails. Palo santo ^(Ficus sp.) in full bloom too. Big tree at
 A & A 9 has buds, apparently of flowers. A cuipo near
 W & W 2 has buds too on naked tree. Banana tree on
 Slothia Is. in flower & leaves are new. All espave have
 had new leaves for a few weeks, + have tiny flowers.
 Pinkish white blossoms at top of tree near generator
 house. Some say its "noble." Guayacán near Barroco
 trail
 House have lost nearly all leaves now.

5 March 1957 The Tabeluia back of generator house now
 in full bloom, pale pink. Took 2 1/4 B&W photos.

Most Triplaris now faded. Many yellow along W.
 bank of canal coming from bamboo. Guayacán blossoming
 now apparently over on B & L. One branch of blue
 jacaranda over Test Table Bldg. in flower, + some trees
 in forest. Trails covered with dry leaves. Many small
 buds on cuipo tree.

9 March 1957 Tabeluia behind generator house still in bloom,
 + some others scattered in forest. Pale pink blossoms. All
 guayacán blossoms gone. Blue jacaranda flowers still prom-
 inent.

16 March 1957 Big tree at Van Tyne 4 now leafless. Eustoria
superba in blossom, flowers on leafless parts of branches.

Trees & Shrubs

16 March 1957

Barro Colorado Is., Canal Zone.

Roble (*T. pentaphylla*) in pink blossom, including big one 50 yds S. of Foreman's House. Still in bloom 27 March.

27 March 1957. Most *Eustavia superba* blossoms have fallen. A few faded Palo Santo (*Triplaris*) blooms. One quayocán in bloom, near JZ3. Balsa shedding cotton. *Bombax variegatum* shedding kapsols, & rare ♂ flowers. Big Tree at AVA well leafed, but one at AVA9 with flower buds which are falling off before mature (as at Van Tyne Big tree much earlier).

5 April 1957 Driving across Isthmus to Colon saw many cuipos with seeds (4 winged), red or yellow. Few deciduous trees without leaves in Ft. Sherman area, but many near Balboa & in Barro Colorado.

7 April 1957 Big ^{Roble} ~~almonds~~ S. of Foreman's house still in bloom. Some javaranda still in bloom on the stand, and rarely a quayocán. Cuipe now with seeds on trees. Rarely a *Bombax* still with "notes"; most with fruits & dropping them. Many black palm fruits on trees.

12 April 1957 The tall Roble S. of Foreman's House still in pink blossom. Fruits 4" diam. on membrillo near #7B1. No leaves on almonds on point opposite generator house. A yellow flowered tree (*Cassia*?) in bloom 100 yds. N. of Barber Rt. house.

16 April 1957. ~~Roble~~ Roble ^{50 yds} ~~near~~ N. of Ched's house still in bloom. *Bombacopsis* at VT 4 now well leafed out. This is longest dry season in Balboa since 1931 - scarcely any

C. Koford
1957

Trees & shrubs

April 16, 1957

BC Is., Canal Zone

rain Jan. 9 until 15 April, then .45 inch (very little at B.C.I.). Some membrillo (Gustavia) fruits on trees now. Passiflora (red) still in bloom. Some black palm fruits have fallen. many figs on ground under large fig tree near W.M.U.B.

27 April 1957 Few flowers remain on big cable 50 yds. S. of Foreman's House. Deep yellow tree (Cassia?) in bloom on island and on nearby mainland. Some membrillo fruits double fist sized & have fallen.

4 May 1957 Only a few Passiflora left on cable S. of Foreman's House. Some black palm fruits have fallen, & passerines eating fleshy parts. Orangeish-yellow blossoming tree still prominent - one near Barbours Pt. House, many near Bamboo. Forest floor covered with dry leaves. Some Gustavia fruits have fallen, & some eaten by vertebrates. Still no rain, and many many trees leafless.

7 May 1957 Some Bombax larringtonii starting to leaf out. Panama tree on Slothia has opened pods & shed fruit.

²¹
~~24~~ May 1957 Little rain yet. A striking bright yellow flowering tree in bloom - guayacan like color, but compound pinnate compound. An orangeish-yellow tree also prominently in bloom. Chichi he said he had never seen these trees bloom prominently in other years. Rain by 25 May.

1 June 1957 Many fruits & nuts of Gustavia on ground, and many new leaves, but at W.M.U.B. to 4 several blossoming profusely still. Almond still leafless.

Insects - General

July 4, 1956

BCI, Canal Zone

Carl W. Pettenmeyer here studying associates of army ants. Formerly worked here with Schneida. Ant queens have beetles & mites on them. He puts light out at night by white wall or cloth & many different moths & other insects there in morning. He said ^{saw} took 6" tailed moth once (= Copepteryx?). I saw peanut-head fulgorid on one wall. Over army ants are many flier size of house flier of genus Callodexia. He thinks there may lay eggs on rocks disturbed by ants.

September 22, 1956 A group of army ants riding at N.

side kitchen, ascending wall as if to escape nest, about 2 a.m.

Trailing from near down water pump (near C.C.). About

noon a group riding up wall at 2nd corner of building

having about a quart of ants hanging together in one

nest (P. niger), & several ants carrying single larvae $\frac{1}{2}$ " long.

December 8, 1956. Saw two of the large blue-tipped-winged damselflies flying together about 10 ft. apart for 1+ minutes as if one pursuing other. This first time I have noted such association. Wingtips colors differed as if ♂ & ♀.

December 22, 1956. Dr. Ansley had lights out at night trying to get bug Loxa.

January 10, 1957. Between buttresses of fig at DC 2 $\frac{3}{4}$, 100± moths perched within 3 ft. ground. Similar sp. near N. side trail near TB 3 (?). Eye on wing gray moth. W. Lundy says there always at site.

turtle

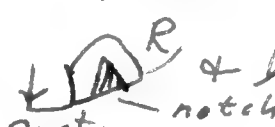
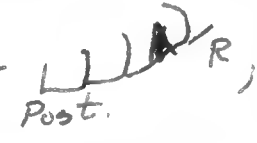
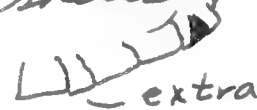
July 29, 1956

B.C. Island, Canal Zone

with Carl Kettenmeyer marked one by cutting notch edge shell.

about 6" long shell. 50 yds. NW of New Lab.

October 3, 1956.

~~September~~Mrs. Charles Bregoire found one with pleiade shell $2\frac{3}{4}$ " long on TB trail near 20. & cut notch in a posterior plate  & kept in aquarium.Two found in palm rubbish near tower, about 3" long shells & these also notched. One  R, the other  extra plate.

November 10, 1956. One soft shelled 3" long on trail near tent area 2.

December 22, 1956. One soft shelled 3" long on trail nr. SVT 1.

Caiman Fuscus

August 29, 1956

B.C. Island, C.Z.

In cayuco with family shortly after dusk, looking along shore with headlamp, saw one about 3 ft. long, + another about 18" long. Red eyeline very bright. Larger allowed approach to 6 ft. before diving.

September 1, 1956. Saw 2 near shore in evening, both about 1 1/2 ft. long. One lying near mouth of Lutz Creek.

Found by eyeline as before.

September 8, 1956 Fausto Bocanegra says he sometimes has seen one about 6 ft. long swimming across area 100 yds. NE dock.

October 7, 1956. In making trip around island saw one about 6 ft. long near Bang's house, and another about 5 feet long in water near Fuentes house.

November 4, 1956. Brought a small one from Panama, taken in Madden Lake area probably + skinned it near dock. Skipped second toe of fore + hind foot, right side
 9" nose to ear of hind leg, + tail 9" (19" total length).
 (+111 EF
 (+11 RH.

Salicata - Genl

August 22, 1956

A B.C. Island, C.Z.

Another large Bufo m. marked at Kithin; FR 11/7/1 in eve.

September 8, 1956 Bufo typhonius remains commonest toad or frog seen along trails. Nearly always see ~~one~~ one in half hour walk, with general observation, not looking for toads.

November 3, 1956. Saw one of the 1 1/2" long brown frogs with green or turquoise spots on ventral side of body on Van Tame trail. Some also seen near Tinker Bldg. & near creek bed of Kuty Stream near foot.

January 5, 1957. Saw one 1/4" long on F-Z line A/A trail near B.

4 March 1957 a moderately large Bufo ~~was seen~~ on dock of boat house at 7 p.m. On trail frogs & toads rare.

Herpes - General

~~Trees & Shrubs~~

⁴5 March 1957

Barro Colorado Island, C.Z.

These translucent white, with equatorial band dark.
A few atop ground in loose soil.

17 March 1957 Bocanegra found a large turtle with shell about a foot long (he demonstrated) on beach near boathouse, laying pingpong ball sized eggs in pit in sand.

30 March 1957 At AVA 9 a turtle about 6" long with 2 ticks on a hind leg and about 5 on shell. Notch in carapace over head }, apparently a natural break.

27 April 1957 George Lee reported grays several small Iguana at S. end of Slothia Island.

Kotford, C.B.

Journal

1963

Peru

Peru trip - Summer 1963

8 May 1963.

New York, N.Y.

Conferred with Fairfield Osborn, president N.Y. Zool. Soc., and his assistant, George Merck, at Rockefeller Center office. Met Peter Isenbel, Brooks Backlund, who are principal members expedition. They expect to leave early June, fly plane to Peru, & set up base at Luisiana on Apurimac River. Area to be explored: Cordillera Vilcabamba, lat 12° S., λ $72\frac{1}{2}^{\circ}$ W., between Urubamba and Apurimac rivers. altitude to over 14000 ft. At N. tip area, an arc of 18 lakes. Expect to drop by parachute, set up landing strips. (Much correspondence followed - Merck, Backlund).

9 July 1963. Arrived Lima, Peru. Left Puerto Rico night of July 7 via PAA flight 295, via Curacao to Panama. Stayed at Tivoli Hotel 8 July, and visited CZBA headquarters, and Vargas Memorial Lab. Salinde and Merdey now active in collection and identification of Panama birds. In Lima, took direct to Casa Humboldt (Francisco Paula Camino 358), pension and home of Koepcke. Dr. H.-W. K. will accompany me to Luisiana (Apurimac River) on July 13.

10-12 July, 1963

Lima, Peru

Consulted Jorge Millberg, Universal Travels, liaison man of expedition. Radio communication has been poor thru SATCO (airline). Started job of getting shotgun, ammo (Rebora Hross, and Iacona (337 Av. España). With letter from game dept., and help of Augustin Jordan in the Prefectura, secured necessary papers & obtained gun. U.S. ammo available, #10 to 12 ga., & also components, shot to #10, and .22 shot shells. Food good in tea rooms, supermarkets, pizzerias, & elsewhere.

13 July 1963. With Koepcke, departed via SATCO at

Journal

13 July 1963

To Luisiana, Apurimac R., Peru

8 a.m. for Ayacucho. Flight over fog and ocean to S., then E. at 5300 meters altitude. Saw dry coast, more shrubs higher, then stone-wall lined fields on slopes. Some lakes in rock & grassland. Clouds over ~~summit~~ ^{summit}, but good view of two nevados to north. Then clear over Rio Mantaro and descended to dry Ayacucho broad valley. Much waguey, spiny bushes, pepper trees. Widely spaced bushes and small trees. Dry beat-up aspect. A large wheat field near airstrip; about 15 boys cut wheat with sickles (15 s./day = \$.60). On ground, igneous lava rocks. Crickets under rocks. A 6" lizard. A man making net for trout in a nearby lake. Near airport some goats, but no other stock seen. Dusty, dry. A mayorlomo said rain Dec. - April. Cloudy over mts. to east. We debarked from plane about 0925, then waited for another plane. Waited all day - it arrived 5 p.m., & not to go until tomorrow. Near airstrip, waguey, prickly pear cactus, thorny bushes. I saw sparrow hawk, doves.

14 July 1963.

To Luisiana, Dpto. Cuzco, Peru.

Plane left about 10 a.m. DC-3 cargo type. Up river, then across mountains to Apurimac Valley. Stopped briefly at Santa Teresita. Then upstream to Luisiana. Forested, with yuca, maize, fields. Indian fishtraps along river. Tall thatched roofed houses. Arowanas nesting. Parrots, ant birds, caracaras, and usual tropical forest birds. Fish traps along Apurimac River; crudely built of sticks, cane; remains barbaric, shredded, near pools at many points. In evening I set 15 ^{snare} traps near river bank. Shot a night hawk in daylight, & a tyrannid. In evening shot 2 ² ~~caracaras~~ ^{caracaras} by river, among sand & rocks; different species, apparently.

Journal
Peru 1963

15 July 1963.

Luisiana, Apurimac R., 1900 ft, PERU.

7 traps along top edge cut bank edge river had yield 3 mice.

#2019. ♂ 2020. Dissected similar ♂, 22 gms., test: 4 mm. long.

Journal

27 July 1963

to Ayacucho, Peru.

Had 5 bats, 2066-2070, in much torn up net hung near spring, at edge grassy clearing. Yesterday Koesche shot a small Nona; dark color, about 10 a.m. I left on SATCO plane from Luisiana for Ayacucho (11500 ft), with Jacques Istel. Flew down Apurimac to jct. with Mantaro R., then up Mantaro to Ayacucho. Came up to road off, dry out, ship specimens, and collect in high country, and get rid of persistent diarrhea. Saturday.

28 July 1963. About 4 p.m. left hotel, climbed hill to NW, & set 21 snap traps next to rocks, rock walls, in area short-grazed grass, scattered bushes of pepper, moguey, prickly pear, others. Old rock walls & stone piles.

29 July 1963. Upper 14 traps held 4 mice (nos. 2071-74), one tail. Bait - walnut. Saw sparrow hawk, marsh hawk, over slopes. / During day plane arrived from Luisiana w. Dick Tompkins & Pepe Parodi. They departed late afternoon. Pepe offered me use of his pickup truck for trip to Tambo.

30 July 1963. With truck, driver, M. Becón (?) & daughter, drove to Tambo, 3 hr. drive. First thru low country of soft rock, caves, spires, cactus, & SW ^{desert} ~~desert~~ appearance. Then up to Puma, small mud town. Higher, to short grass pampa where battle Ayacucho fought. Bushy higher, and finally near Apacheta (14000 ft) green pampa, a lake, clear streams, alpacas, llamas. Much beat up by livestock, however. Jagged ridges dark rock. No yacuta seen. Lapwings, puma birds. Then down to Tambo, about 11000 ft, an Indian town. Bull teasing in a corral today; some sort of holiday. We left Pepe's suegra, Antonia, & drove on. Up & down low in valley. River, clear. Trees, shrubs, birds. Chacras on slopes. Finally up to pass of Tapura, where road started to descend. I camped there. Put out 35 traps near rocks, under himencha bushes. Many hummers in moss; droppings. Pastoral Indians (Quechua), in thatched stone huts, growing potatoes; horses, cattle, sheep, but no llamas



Journal

30 July 1963

Tapuna Pass, Dept. Ayacucho, Peru.

on alpacas. No tucos-tucos or guinea pigs. Under bushes in moss, many burrows 1"-2" diam., and large mouse sized droppings, [first trap put there caught 0]. Included 2 blind set no. 0 steel traps. Just cold breeze from NW in evening, fog forming at crest. Calm + clear at night but ice condensed on sleeping bag.

31 July 1963. Traps held only, Phyllotis rusticus, 1 Akodon bolivianus. Put up skins. Phyllotis partly eaten by another mouse (?). Saw 2 condors, both imm. Sparrow hawk. Butos, mostly white underneath, black tips wings, hovering over rocks + grass. Boys said venison + deer in rocky hills at higher level. Most grass brown; green near streams. / About 1130, ^{from} Ciro Asanuri arrived (Ayacucho student biologist). We walked about 1 mile from pass to NW, toward Apurimac R., + stopped at Quechua stone house. They gave us chicha and potato-like vegetable to eat; not bad. We put out 30 traps, some by house, stream, rock wall, in hiviruta shrubs, on and near huge boulders high on hill. Completed about 4:30 p.m. At 5 p.m. (after sunset), a trap at house took ^{Neotomys} ~~an~~ Akodon chiriqui?. Two dogs moved some traps near house evening. No bats seen or night birds heard. Pollywogs in stream. Many Certhia, + Zonotrichia capensis, plus other small birds. Boiled amaranthus for huacra, huacra potatoes for dinner. Cloudy evening. Clear + cold by midnight.

1 August 1963. Water frozen. Breeze down valley. Traps near stream by house took 2 long-tailed mice. Phyllotis by a rock wall on dry slope. Chrysodactylus by boulder high on hill. No catch among bushes on hill, tho much sign. Bait was endosperm of soaked corn. Saw Turdus, and Patagona gigas in yard. Put up specimens. Corn, warmed dry in pan, for breakfast. Ciro left for Tumbes last eve, to return first thing in morning. Not here by 12:15. I walked to Tapuna Pass + waited for car. None by 2 p.m.,

Journal.

1 August 1963

Nr. Tapuna, Dpt. Ayacucho, Peru

so started walking NW, toward Yaramante. Steep rocky slopes to E. of pass faintly green in bottom woods. Jagged ridge; much bunch grass + brush ^{on slopes,} at pass, barometer 18,950". Left pass 2 p.m. Hiked down road to NW. Saw a snipe, Patagona, near stream at 12,000'. Many ^{halitacurion,} halitacurion dogs, indigenous, along road and trail (cut across most road switchbacks). About 4:30 stopped on NE slope of steep canyon, where rather forest extended up into grass-shrub area. Set 30 traps in partly opened 15' fern-wood. Estimated 3 mi. NW Tapuna Pass, 10,700' (20,7"). Many small birds, big black Turdus, hummingbirds. Overcast evening, clearing. Cold, but probably over 40° minimum. No wind right.

2 August 1963. Traps held 3 mice. Phyllotis in opened area, bare tree, on rocks. The "Akodon" in dark moss-fern woods. Apparently this is Rio Pizne drainage. Grassland, probably largely man-caused, started 200 m. above my campsite. At 10 a.m. I started walking down road. About noon, boarded a pickup truck bound for Tercera. There were 16 (2 or 3 children in back, plus quarters of beef, butter & skins, corn, beer, & miscellaneous belongings of people. Group included 4 Swiss (2 m, 2 f) from a school in Lima. Yaramante seemed to be a single shed on exposed slope. Calicanto consisted of 30± square low houses or sheds crammed together, made of horizontal sticks, roofs of corrug. sheet metal held down with rocks. Mostly cleared ground here. Alt. 7300± ft. Dirty, unattractive. I saw a pet monkey (C. apella?) here. Then on to Ayra, 5500 ft., where buildings were permanent. Civil guard station here. Many rangers (5/col). A short dist. below Calicanto was apparent hq. of the road builders. U.S. aid & sev'l companies involved. Fine clear rushing stream about 30' wide in canyon bottom. From here on construction in progress. Many delays for bulldozers, trucks. Small concrete bridges & culverts being made. Hundreds of labnars. Many ^{hillside} ~~and~~ fire, even in trees. Everywhere steep slopes + interesting

Journal

2 August 1963

Rio Apurimac, Dpt. Ayacucho, Peru.

valleys, so no view across Apurimac possible. Rough riding in truck, & all cargo badly packed. Frequent stops to deliver parcels, beer, sell newspapers, eggs, bread. Oropendolas at Ayra. Macaws, parrots, later, when could see across Apurimac. Reached edge river opposite Terceta about 4:15 p.m. Crossed on small balsas rafted (2 solar each). My fare 40 soles (= \$1.50). From Huanta, the Swiss paid 90, for 12 1/2 hr. ride. / At Terceta, no radio commun. with Luisiana, so stayed overnight. This is part of La Union, a group of haciendas. A large dormitory room and rusty kitchen available. / Heard *Caprimulgus* edge airstrips in evening. Slept at edge strip. No insects at night. Nearly full moon.

3 August 1963. alto-cumulus with light breeze, 0800. I waited for plane to go to Luisiana (4 hrs. fast bike).

Camp at head E. branch of Mantalo River (in k. drainage)

to walk N. to higher ground of lake area

10 August 1963. Supposedly this walk starts today. Shotgun labels, formalin, ^{a few} ~~went in~~ traps, went in with Jacome & Lake. Hope to "maulift" specimens out of their country. I am ed by a cons to go. FT - 1000 1000

1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we shall consider the special case of a uniform field.

3. The third part is devoted to the case of a non-uniform field.

4. In the fourth part, we shall discuss the results of our calculations.

5. The fifth part is devoted to a comparison of our results with the results of other authors.

6. In the sixth part, we shall discuss the physical meaning of our results.

7. The seventh part is devoted to a summary of the results of the paper.

8. In the eighth part, we shall discuss the conclusions of the paper.

9. The ninth part is devoted to a discussion of the prospects of further research.

10. In the tenth part, we shall discuss the bibliography of the paper.

11. The eleventh part is devoted to a discussion of the results of the paper.

12. In the twelfth part, we shall discuss the conclusions of the paper.

13. The thirteenth part is devoted to a discussion of the prospects of further research.

14. In the fourteenth part, we shall discuss the bibliography of the paper.

15. The fifteenth part is devoted to a discussion of the results of the paper.

16. In the sixteenth part, we shall discuss the conclusions of the paper.

17. The seventeenth part is devoted to a discussion of the prospects of further research.

18. In the eighteenth part, we shall discuss the bibliography of the paper.

19. The nineteenth part is devoted to a discussion of the results of the paper.

20. In the twentieth part, we shall discuss the conclusions of the paper.

21. The twenty-first part is devoted to a discussion of the prospects of further research.

22. In the twenty-second part, we shall discuss the bibliography of the paper.

23. The twenty-third part is devoted to a discussion of the results of the paper.

24. In the twenty-fourth part, we shall discuss the conclusions of the paper.

x Tercita
Quimbini

Sunquiroato

Luisa
Santa Rosa

Mipitunani

Peru 1963

1963

July 13 Ayacucho - airport. (1) Toward Ayacucho (pepper tree). 2 ~~to~~ boys ^{at} ~~at~~
 airport. (3) (4) Boys cut wheat with scythes. (5) Pepper tree + hills
 W. of Ayacucho. (6)

July 14 (7) Santa Teresita, Stokhouse, from plane or ground.

(8)

Kotford, C. B.

Journal

1965-1966

Primate Studies

Japan

India

Kenya

Uganda

Thailand

Australia

Journal - Japan 1965

4 June 1965. Departed San Juan, P.R., for New York. Lv. 15:30.

15 June, via TWA to San Francisco, TWA, departing 19:15.

16 June, conferred with K.F. Meyer at Hooper Foundation, San Francisco, concerning devel. monkey colonies in Samoa. He thought the idea impractical, in economic aspect. ^{Conferred w. Arnold S. Selye at Univ. Calif., Forestry.} Visited Dr. S. Leopold at MVZ.

17 June, I visited Dr. Leon Schmidt at Davis, and saw construction in progress for the primate center. He also thought the Samoa project impractical. Visited Dr. R. Rudd, W. Hamilton.

18 June, helicopter Berkeley to S.F. Then PAA fl. 1, lv. 0900, to Honolulu.

19 June, visited Dr. John Henderson, E-W Center of Univ. Hawaii.

20 June, 12:30, departed on PAA JAL for Tokyo. Arrived ^{15:45} 3⁺,

21 June, and was met by K. Yoshida and S. Azuma. At Akasaka Prince Hotel met C. Nagel, and all conferred. Azuma recently one month at Shimokita; he said Kudomari band about 15, w. 6 adult ♀♀, of which 5 have had infants, starting April. He had photos taken within 5-10 meters range. Yoshida said 26 already born at Takasaka, + over 1000 total. Azuma said monkeys in region of Inland Sea bred early, for no obvious reason. New vegetation now started at Shimokita, + photos show some with crown molting. Yoshida says Sogayusan usually earliest ^{young}. Overcast, rainy, muggy in Tokyo.

22 June 1965. Visited NSF office + met O'Connell, Arvey, others.

No cash from Delta yet; sent cable requesting. Bought transport tickets, stopped, discussed project w. Azuma + Yoshida. Latter departed for Monkey Center. Azuma, Nagel, + I boarded train for Denver at 6:30 p.m.; practically new sleepers.

Journal

23 June 1965

N. Hantsu, Japan

Light at 4 a.m. Rice fields flooded, wooded hills, apple trees, bayonet shrubs. Deciduous trees and planted (?) conifers. A few crows. Arrived Aomori about 6 a.m. Most buildings, wooden + law; fish, lumber, + port town. Ships carry trains to Hokkaido. Walked to boat area, where ^{small} ~~large~~ dried boat (100') took us to Wakinosawa, on Ishinomaki peninsula, a distance of about 2 1/2 hours. Sea clear + fairly calm today. / At Wakinosawa, many drying squid on lines + mats. Several small stores with hardware, groceries, clothing; about like Playa Hermosa. Azuma introduced us to the mayor, Yamazaki. We left about 1:30 on small boat for Kurodomari. Shoreline of tuff cliffs w. caves + pockets. Shoreline road had gap of about 1 km. shortly before reaching Kurodomari. Few sea birds; occasional puffin, gull, or albatross, but a fishing hawk (^{Circus?} ~~Circus~~) fairly common along shoreline. K. a small fishing village, w. no store, a few dozen wooden houses. Now dipping in hot water + then drying small fish, about 3", + drying spread on mats. Many women working. Azuma said nearly all of 20 to 50 go to Tokyo to work in summer, so not here now. / Mayor of Wakinos., + others, said a lone monkey came to hill at edge town + stayed several hours on June 16, and that people fed him; apparently none seen there before; rare event. Head man Kurod. - Tomijiro Yamada. Store owner, Wakinos. - Shinjiro Kawagishi. / We left Kurod. 1:30 and walked to next valley N., along road seashore, and up canyon. A few crops lower part, but no people lived there. Visited monkey feeding area, saw several, walked to higher level, + returned. Saw droppings of serow (?) in shady forest. Stayed night in Kurodomari, in home of head man.

Journal

24 June 1965.

N. Honshu, Japan

Boat (fisherman) to Wakinasawa, leaving 7 a.m. Then bus at 8:05 to Omurata R.R. sta. (arr. 10 a.m.). Missed train to Aomori, thinking we were to take another bus. Swallow meeting in station cover. Town close to foot Mt. Oore, heavily wooded w. lower slopes cut clean in many areas. (Rain last night at Kusod., + overcast morning.).

* ² _{INSECT}

25 June 1965. No word from Azuma, so took bus excursion to Lake Towada (210 yen, 2 1/2 hrs., w. commentary). Vegetation mixed trees, thick green, few flowers. Pink azaleas in flower. Some snow at higher levels, as on Hokkaido. Streams, small waterfalls, basalt-like rocks. A few hot spring hotels (onsen). Arrived shore Lake T. about 10 a.m. Took boat on beautiful shoreline ride around peninsula to resort town of Jozumijima, where dozens small boats for rent, fine views. Tall ^{Cryptomeria} ~~Thuyopsis~~ about 30" dbh, in small redwood-like stands. High rough-faced cliffs around lake, with clinging bushes + periwinkle-like Japanese plants. Returned by bus to Sukayu. Phone from Azuma, asking us to come to Aomori, so we returned by bus (about 1 hr). Met Azuma and Masao Otake, + all stayed at inn (Sei Yu So)

on NW side of town. We go to Tsugaru Tomorrow.

insert above ↑

* June 24 addenda. Took next train via Aomori, Aomori to Sakuya Onsen, a large hot spring hotel in ski area. Took mixed sex hot baths in mineral water. Placed a little sun down, but many people.

26 June 1965. Took 0810 train for Miyama, on E. side Tsugaru Pen. Three rice fields, heavily wooded hills to W. Much more prosperous than Wakinasawa area, + water calm (protected). We went to the forestry station and met the chief there, + Azuma took talked long with him.

Journal

26 June 1965 (Sat.)

Tsugaru Penin., N. Honshu, Japan.

Monkeys seen principally in winter, when descend from broadleaf zone into *Thujopsis* (*hiba*) zone. ^{Hiba} ~~Hiba~~ is main tree nurtured here. We went by truck 1/2 hr. inland to Masukawa For. Exp. Sta., a 2 story lodging near stream in bottom of canyon, in ~~undergrowth~~ ^{zone forest}, much cut over, but beautiful green aspect, clear water, broadens, rocks. Fine place to stay. Arr. 2:10 p.m. & took orientation walk. Many birds low in canyon; cuckoo (?) heard. / Azuma says monkeys shy here; seen at 1/2 km. or more. Also about 100 serow (*Kamoshika*) thought to be in region, & many lodgers, raccoons. Tomorrow we go with guide up ridge to look for monkeys, w. Azuma, Otako, Nagel. / Forestry people have detailed vegetation maps; monkeys almost restricted to the *Fagus*-*Acu* area, above level conifers.

27 June 1965. Left station 0735, with guide. Calm, clear. Up

Mishinomata mainstream, then cross country up slopes & creek bed, through almost continuous bamboo thickets (3-7' high) to top of ridge, which we reached about 1200. ~~Up~~ Above *Thujopsis* area, mostly beech (*Fagus*) trees, w. occasional *Acu* or other tree, ^{birch} and steep ridge considerable ~~but~~. No sign monkey trails or feeding, but apparent serow (*Capreomys*) droppings, fresh, one site. We looked across to NE at Mt. Masukawa, which had treeless areas of low bamboo near summit. Some other high peaks also had bald spots of a few acres (wind?). We descended ridge to canyon bottom, then to E. and N. around base of Mt. Ho Masukawa. The guide told us where he had seen, or heard, of monkeys. He had been working in area 20 years and said he had seen monkeys about 100 times. He seemed to know country, but trails very poor & not kept up. We arrived back at station about 6:30 p.m., after walking at least

Journal

27 June 1965.

Masukawa, Aomori Pref., Japan.

10 miles, much of it through undergrowth without trails. From other people Azuma heard tales of sightings in *Thuyopsis* zone in summer, including instance about 10 ^{days} ~~not~~ before in canyon bottom about a mile from the station, where mother w. baby seen with others + rather tame. / Mt. H. Masukawa rounded, forested, 714 meters, m. lat. $41^{\circ}08'N$, $140^{\circ}17'E$. / We saw cloven track, probably serow, + browsed bushes, ^{prob.} ~~prob.~~ by same.

28 June 1965. Windy, overcast. Left station about 9 a.m. by truck for Masukawa. Bus at 10 a.m. to N. toward Cape Tappi. Narrow road through wooden fishing villages; boats, nets, drying squid. 10:50, bus terminated due to construction ahead. We walked to next town + chartered fishing boat around Cape + S. to Horonai, a single family village. Water clear, cold. Islets. about 40 min. on 22' diesel fish boat. This E. coast low lava cliffs backed by bare rounded hills, w. stunted trees close above - like Calif. coast S. of San Francisco; the tiger lilies looked like poppies from distance. *Brodiaea*, lupin or vetch. / Based at fishermen's home (no roads here). Left about 1 p.m., walked N. 1 mile, then up stream valley of Horonai. Logging *Thuyopsis* there, + large areas slopes with old stumps. Cut areas w. several erosion slides + no tree reproduction. Azuma talked with loggers + forest men; no monkeys now (logging since 1957), the one report far up canyon (lost winter?); about 8 km. from Mt. Masukawa. As other places, *Deutzia* in flower, + string flowers hanging from walnuts. / Serow reported recently to cross ft. Horonai stream, + to be seen often in fall on hills near shore. / Someone else told SA that monkeys sometimes (formerly) on first ridge from sea.

Journal

29 June 1965.

To Aomori, N. Honshu, Japan.

Stratus clouds. 12+ boats out fishing nearby. Departed Horonai settlement 0830 and walked trail & building road to Cape Tappi. Then on dirt road to S. to end bus line. Road goes through tunnels in volcanic rock, along seashore. Many women out gathering seaweed and molluscs at low tide. Occas. gulls. A mostly white wagtail (?) along shore rocks, & a smaller tit (?) w. long tail + white outer tail feathers; and blue robin-sized bird w. red-brown breast (- nest w. large young in rock pocket at Horonai). No hawks seen, nor in forest. / Bus to Muimaya, then train at about noon to Aomori. Along way occas. hawk or kite (brown; Circus?). Orientation & ticket bus. Aomori; then stayed at ryokan Sei Yu So.

30 June 1965. Left Aomori airport 11:45 on flight to Tokyo. Mostly cloudy so saw little. Then left Tokyo 1:20 on flight to Miyazaki, SE Kyushu, & there met K. Yoshida of J.M.C. Stayed at Nizatoro ryokan. Fine views over Japan sea of seaward slopes + islets.

1 July 1965. Left 7:45⁵⁰ a.m. on bus to Koshiba (31°25'N, 131°25'E). Yoshida told me seminole houses at Tainimeishi; for breeding. Iwanishi studied, & his student Itani; and while there saw monkeys & became interested in these; start JMC w. Iman, Itani, Kawamura. / along road picturesque fishing towns, much planted Cryptomeria (good for boat bldg.). Coast of tilted sandstone strata. / Arrived opposite Koshiba, at small settlement & inn at Ishinami, & met Mr. Iwasuke Tokito, retired school principal, interested in botany & monkeys. / Of 18 mol. ♀♀ on isl., said 2 births (found 3). 11 born last yr., & expect 10-15 this yr. All info. died last yr. during 20 day typhoon period, when island inaccessible. / This

Journal

1 July 1965

SE Kyushu, Japan

Raccoons + badgers on island, + one fisherman + wife live there. Island 113.7 meters high on map, 800 meters greatest length, 200 to 500 m. from mainland, depending on tide. Channel w. strong current, often too rough to cross. at low tide 100+ meters sand beach on mainland side. Isl. surrounded by rock shelf, walkable; cliffs to 60' high, sandstone. Entire isl. thick bushes + trees of many species, to 30' tall. Trails few + poor, + slopes steep; no flat ground. Near creek, fisherman's house. a red enamel sign; Wildlife Protection Area. / Most common trees said to be: Tabu (Ficus), Isunysu, Nūmaki (largest; to 20" diam.), and Hamabīwa. Etc. for Isunysu, said to have leaves, fruits, twigs eaten by monkey. ^{very} (Enubīwa is one; monkeys eat it.) a few deciduous shrubs, or trees. Neither Tokito nor Yoshida knew scientific names of veg. / Said eat limpets on shore. / a few pines on island. Kanāmami tree; monkeys like fruit, + same species grows in North, they said. A Ferns common. / Yoshida identified mothers, sexed mfs. Left isl. about 5:30 p.m. + stayed at Ishinami.

2 July 1965. Left by taxi for Taiminisaki at 6:30 a.m. Monkey feeding place on S. side of steep ridge where lighthouse (+ weather instruments). Much planted Cryptomeria. Bare hilltops maintained by about 80 free-horses; not pure stock, but part Jap. + Arab blood, said Yoshida. A fine modern modest hotel on point; Kuroshiro. Fish for flying fish in area (hard + stringy meat). About 100 monkeys here, said Y.; Azuma studied for 1 (?) yrs. Steep slopes + thick green shrubs + trees, low second growth. Raining today. Monkeys fed irregularly. / We went by road to monkey feeding area, which was cleared + open. About 300' above sea level in canyon.

Journal

2 July 1965

SE Kyushu, Japan

Monkeys sometimes to shore, but not known to eat Lemnaceae. Single band w. wide range; about 2×4 km. / Flying fish + local abalone for breakfast. / 0040, took bus for Miyazaki. 1025, turn of abalone. Arr. Miyazaki 12:10. Dept. for Beppu 12:50 in train. Arr. Beppu 5pm. Tapi to Takasaki, 260. Looked at monkeys $\frac{1}{2}$ hr. in rain. Then returned to Beppu, + took train to Ohayama, all night trip.

3 July 1965. Arrived Ohayama 5:45 a.m. To ferry, + ~~left~~ ^{left} 0800 for Shodoshima, 1 hr 10 min. ride. Visited monkey area at Chosikei, where ^{Mr. Takao} gp. of about 181 + 75, according to warden, not incl. info. / Orig. 5 bds. in Shodosh.; one transpl. to Okinoshima, another to Miyajima, + 1 split, so 4 left (3 localities), + only main area regularly provisioned. When visitors arrive, warden blows police whistle + siren say leave, + monkeys rush to site. / K. said that monkeys here showed much less dom. hierarchy + social tension than at Takasaki, according to studies by Kawamura + later Yamada. This first trip of Yoshida here. No current scientific studies. Climate prob. as mild as on Kyushu. / Monkeys in zone of red pines to 30' tall, + low bushes. Apparently stay in pine zone. Said to be 45 born, I saw 1 +, close, w. 2 info. same size + appearance, ♂ + ♀. Warden said there twins, + that another set, to different mother, born about 3 yrs. ago (how know not adopted?). / Monkeys large, pelage good, + only occas. ♀ showed signs molt. Keeper said last yr. first born Mar. 8; late Mar. this year. / Bus to Karaku, then down "rope way," a funicular, + saw large groups monkeys at foot. These grab handbags + other things tourists. / Bus downhill to Kusakube, then bus to ^{ferry} ferry landing, + took 1530 boat for Ohayama. Then took train for Takasaki, inland, arriving about 1730, + spent night in dorm.

ref. to
M. fusc.
notes.

Journal

4 July 1965.

Takakashi, S. Honshu, Japan

Small town on river ^{among} forested steep hills. Went to monkey park at Izagysan (slope near edge town) and observed monkeys. Rain on + off. Then
 Dep. 1134, Takah. changed 3:15. ^{arr. about 1930.} train to Nagoya. Electric train $\frac{1}{2}$ hr. to Inuyama. Bus to same park at Izagysan. K. said $\frac{1}{2}$ million yen deficit/yr. Takasaki run by Oita city, takes in 15 million, + has surplus. / Izagysan much more pleasant park, + town, than Takasakiyama.

5 July 1965. Monday

JMC, Inuyama, Aichi, Japan.

Raining; ^{Kiso} river high, muddy, fast. At JMC had conference re project and budget with Dr. Kawai, Takada, + Furuya, Azuma, Yoshida. Evidently they had given little thought to specific details or justification of budget. Prepared list all items desired by Japanese, plus estimated costs.

6 July 1965. To Kyoto with Kawai, Nagai, Azuma, ^{Furuya,} Takada. Conferred w.

Dr. Miyaji, Ito, Imanishi at Dept. Anthropol., Kyoto Univ. In afternoon discussed budget. Informed them I expected about 4 mill. 300 thou. yen would prob. be approved, + they trimmed list to about that figure. Returned to Nagoya + Inuyama. Raining day.

7 July 1965. In Inuyama. Raining morning. Visited Monkey Center + exp. animal zone at former center. Budget conference. Mixed +

tried Bernyl; at 10 mgm/kg, put down 12 kg. ♂ in 5 min. (10 mg/kg mix.) / A large enclosure for Rhesus monkeys, with electrified fence. Enclosure of about $1\frac{1}{2}$ acres for bonnet + langurs, w. wire link fence + electric wires. Both areas seemed good for study purposes, + animals there year around. / Furuya says that on islets in Masume (?) bay off Nagoya, *M. cyclops* breeds seasonally, births Mar. to July; *Papio* all year w/o season; *M. irus* all yr. w. 2 peaks, judged by totals, but upon looking at his data

Journal

7 July 1965

Inuyama, Aichi, Japan.

I saw ~~that~~ births in fall in 1961, first yr. after introduced, & that later they occurred earlier, peak about May; so a shift in time of births - not year around in any one year.

Add part under M. fuscata, 7 to 11 July.

12 July 1965. Slow train; arrived Kaz. 3 p.m. Taxi to main monkey park, where Mr. MIURA in charge. Overcast, windy. This was center of troop S, prev. studied by Kawamura (1955 article). About a dozen animals being fed apples, say beans, near office shack. People pay 50 ¥ admission. Very tame; many eat from hand. Miura said about 95 total; peak births May; 16 born + 1 died; none pregnant now. Molt seemed completed. Animals in good condition. Being completed was monkey fence enclosing 2360 "tanbo" of hill slope. Fence about 9' high wire, 6± strands electric above w. overhang. Sp. will be kept in enclosure, apparently. This at edge crop area (rice, corn). A school across valley (weather records?). Much second growth on hill slopes, but patches forest w. Pines, alms, broadleaves. About 1/2 conifers. Green veg.; rather humid, warm. This near the village of Ichitoyo (= Minogami?). Apparently on SE side of Takagoyama, about 1000' mt. This group will soon be fenced so poor for study. / By taxi we then went toward Kaz. again & turned back NE up long wooded valley w. occas. low cliffs to other side of Takagoyama, where troop A ranged & was somewhat fed. Nishida had studied there for a month, & had lived in local farmers house. Few crops here, & few people; some slopes planted in Cryptomeria. Roadwork - so walked last 20 min., then came to sign w. monkey picture (just

Journal


12 July 1965

Takagoyama, Chiba Pref., Japan

before a tunnel) and took trail up steep slope. About 15 min. up to crest of pass, where overlooks sev'l sq. miles of deciduous tree-forest to the N. a 15' hut, where one could camp. Monkeys fed occas., but no formal seats or roofs, & all fairly wild. I saw about 6 animals; still molting; crown only on one ♀ w. inf.; part of mid-back on two large immes. Beautiful spot, prob. 800+ ft. elev. Two local men, who fed monkeys, said about 170, + ~~that~~ 19 inf. born + more ♀♀ present (^{said} 27 last yr.?). They gave me chart of age + sex classif. by Nishida, made a few yrs. ago. I apparently this higher less-provisioned band has molt + births later than the provisioned band #. 5. Getting late, so returned to railroad in Taki, + on to Tokyo by train.

13 July 1965.

Kinkazan Isl., Miyagi Pref., Japan.

W. Koyama, slow train (1½ hr.) from Sendai to Ishinomaki; then boat (2 hrs.) to Kinkazan, w. stop at Ojikamisake (town ½ hr. from Kinkazan). Saw 40' launch fishing with nets spread by poles + dipped from bow ; sev'l boats converged on one school fish. Planted Cryptomerian; red pine trees; rocky shoreline picturesque. Kinkazan about 3 mi. long, + about 800 m. off tip of peninsula. Clear blue water. Rocky shelf shore (granite?). Main attractions about 3 temples, where hundreds of people, + prayer objects for sale. Little commercialism. Probably 1 large newish Inn. A coast guard (?) station on one point. Temples have very elaborate + intricate wooden carvings on outside below roof - much weathered. A few monkeys in cage, + one big ♂ free on a roof. A few tame Japanese deer among the people. Beautiful

Journal

13 July 1965.

Kinkazan, Miyagi Pref., Japan

large cryptomerias, + old cherry trees, along approach to temple area. We walked up trail to crest (E-W?). Large trees widely spaced w. little undergrowth. Dogwood in flower. "Salal" common low undergrowth. Sedges, moss on ridge. Above conifers, prominently deciduous - beech, maple, elm, oak; occas. Abies, Pinus, Cryptomeria (a few ~~Cryptomeria~~ some planted stands too). Natural looking perhaps climax forest on N. side ridge; the deer looked natural there (a high alarm ^{squall} ~~cry~~, single, almost monkey like; sometimes repeated at intervals). Ravens, ^(crows?) fairly common, noisy. A large + small-leaved species maple. Smaller-leaved elm w. seed strings. Beech - some in flower, some w. green nuts. (large leaves) (smaller lvs.) / Occas. Thuja. At crest a sign: Oshika Hantō (peninsula), Kinka San (golden flower mt.), "Natural Park of Miyagi Pref." Much deer tracks, droppings, browsed bushes, but did not see the monkeys. Apparently no provisioning. Boy at temple said about 70 in a single troop. Walking good, tho slopes steep + locally wet. Away from main trail, clean + attractive. Prob. good for field work. Many gulls (dark slaty backs; some w. band tail) around island, especially flocking 500+ in evening on Peninsula. Excellent views up islandy cliffy coast from crest, tho a stratus day. Returned by train to Sendai. Koyama started back to Kyoto.

14 July 1965.

Aomori Pref., Japan.

Arrived Aomori by train from Sendai (7 hrs.). To Wakurasawa by boat - almost clear but hazy; light breeze; fine trip; Tsugara looked close. Azuma not arrived. Boat ride to near end road (Tohodo?); 15 min to end road, then 20 along coastline (cliffs + boulders) to nearest houses of Kusodomari.

Journal

14 July 1965

Shimokita Pen., Aomori Pref., Japan

Then to Kaizoku (?), monkey canyon. Several by the storage ^{shack,} ~~shacks~~ where a supply of peanuts & wheat had been put out (1520). / at elem. school, saw new Kent weather instr. shelter & rain gauge; out 1 month; science teacher Kanji Kato kept records. He thought July temp. range about ¹² -10° to $+26^{\circ}$. Calm, clear, low tide about 6:30 p.m.

15 July 1965. Drizzly rain night and in morning. To Kusodomari, & caught boat to Wakinosawa to await Azuma ^{Nagel} ~~and~~; who arrived noon from Aomori. They worked on construction problems then, & I walked back to ^{Kaizoku,} ~~Wakinosawa~~, 2 hours from Wakinosawa by coast. Tidal range about 3'

apparently. Wakinosawa to end road about 50 min. walk w. pack. / Watched monkeys & camped at feed shed. Light rain. / ^{M. fusc.} Two info. picked up pieces food from box & ate. Occas. some a little frightened & ran off, or into trees. Strange to see monkeys climbing about in conifers! (*Thuyopsis*). A few at a time departed; when adult down food box, immatures go to it immediately. All gone by 5:25 p.m. Calm; alto str. Vigorous play of 1-3 yr. olds on ground. 5:50, "Came out" 2 3(?) to box; soon left. / 1845, 50 yds. up slope to S. of shack, 100 yds. down canyon, 3 yr. played in *Thuyopsis*.

sp.
notes

16 July 1965. Light rain night; calm. str. morning. In moonlight, heard monkeys at night, to S., & at 7 a.m. To Kusodomari, conf. w. Azuma & Nagel; then up trail behind school, going E. Saw *Dryolutes*-type woodpecker *Columba*. At least 3 spp. *Acacia*. Planted areas of *Cryptomeria*. at 10:10 (9:40 left) at a divide. Took branch I thought for Kaizoku, but ended up going E. at low level. Larks w. new leaves. Saw a jay-crested, mostly grey, blue wings. In some areas forest the cicadas a loud chorus. No monkey sign, tho apparent rabbit.


Journal

16 July 1965.

Shimokita Penin., Honshu, ^{Japan.}

Returned to Kusodomari + Kaejohi, arriving 1510. / Nagel + Az. secured materials + carpenter for feeder, etc.

17 July 1965. Overcast, windy. Confined Azuma, Nagel; carpenter was building feeder. Departed Wae Kusodomari 1230 + walked shore route to Wakinosawa in 73 min.; low tide + light pack. No boats out due wind, so took bus + train via Ominato to shop at Aomori, + stayed there.

18 July 1965. Shopped in Aomori for eqpt. + familiarization. Nearly everything obtainable; food shopping excellent. Some camping gear too. Prices higher than Tokyo, perhaps 10-20% on some items. / In fish markets they sell apparent acid-ecor, like a red pineapple -  attached; big purple, red-orange, smooth, about 4" x 3". Octopus large, 10⁺ lbs. Apples, melons, peaches in markets.

19 July 1965. Alto stratus; calm. On dock 3 porpoises of 2 species, about 85 to 105 kg. (weighed), + 6' long. Large white area ventral. Apparently used for food (= canned whale?). I returned to Wakinosawa + Kusodomari. / Feeder complete.
(15½°C. at 7 a.m. at feeding area).

20 July 1965. With Azuma, took boat up coast to Fukuwa, coastal fishing town, 1½ hrs by fishing diesel. High cliffs of ^{lava} fragments imbedded in matrix. Sea cover occasionally. Buildings + crops + people ₁ rare. Forested slopes, steep, mostly second growth, but many conifers. Saw about 6 ospreys, including stick nest atop peninsula, bird (juv.?) on nest, + 1 or 2 flying nearby. Also saw apparent Buteo, + 2 apparent Aquila together. / Cliffs changed to red + tan sandstone, + later to gray water-eroded

Journal

20 July 1965.

Shimokita, Aomori, Japan

rock (some badlands-like), w. some columnar structure. Yukuiri had road. I visited Osamu Mori (F. Jr. High Sch., Sai-mura), amateur botanist. He knew Japanese names of plants well, but not scientific names. I brought 12⁺ leaf specimens which he identified rapidly, + located in the flora book. I Azuma said a trip of 30⁺ to north of Fukuiri.

21 July 1965. Windy night; 14¹/₂° C. at 7 a.m. Yesterday Az. + I

designated most trees, + marked w. tags, for phenological + nutritional survey - 10 species, marked 2 of each (1A, 1B etc.).

With Azuma + Nagel by bus + train to Aomori. Shrub in bloom (Deutzia?) along edges farm plots. This is about end of summer wet season (tsuyu?); affects warblers too. Now people said to leave city (Tokyo) for cooler spots.

22 July 1965.

Sendai, Japan

Azuma + Nagel to Kinkazan for inquiries. I visited Takahashi Univ.; Dr. Aoki in Physiology, med. school. Then Dr. T. Schlander, NSF grant geologist, at Inst. Geol. + Palaeontology. University buildings dirty + run down, but people pleasant.

23 July 1965. Fri.

Tokyo, Japan

Back in Tokyo to confer w. NSF, get mail. Letter of credit had arrived from Delta. Established free yen acct. at Chase Manh. Bank. Bought camera, Mamiya C-3, w. 80 + 180 mm lenses, at Keinara, about 1 block N. of Edo-dori on Chuo-dori.

²⁶
24-~~25~~ July 1965. Sat., Sun. Office work, Tokyo, + confer with NSF office. Confer w. Nagel re budget.

27 July 1965. Took 6 a.m. Hikari to Nagoya, then train to

Journal

27 July 1965.

To Inuyama, Aichi, Japan

Inuyama & J. Monkey Center. Conferred w. Yoshida, Kawai, re budget. Revised the budget & categories.

28 July 1965. Budget business at JMC. Paid M. Kawai 600,000 yen, & worked out budget limits for August.

29 July 1965. Returned to Tokyo (Fri.). Conferred with D. Arvey at NSF.

30-31 July 1965. Tokyo. Paper work & correspondence. The hot post-rainy season now; many more swimmers & weekend travelers.

1 August 1965. Departed 11 a.m., JAL, for Hong Kong. Visibility poor below much of way, but many foam studies on water. No view of Taiwan. Went up the p.

2 August 1965. Peak train & walked the circle around the Peak. Saw & heard many birds - soaring hawk, tits?, cuckoos(?), in choparral-like vegetation. Large snail (3") ~~and~~ shaped. Saw no lizards. Various hills in sight bare, or treeless & green; any former trees probably ^{gone} long.

2 August 1965. Visited Hong Kong Univ., which had fairly modern biology building (on #7, Aberdeen, bus line). Holiday. Dr. (Mrs.) Marshall (ne Aldridge) on leave; she ^{was} said to be interested in mammals. Dept. Head, Thorncroft, works on adenopituitary. I talked to only 2 Chinese girls. Visited Repulse (ive) Bay, & Aberdeen - a small ^{packet} of seething Chinese boat & market life. Sea littered but still blue, not muddy. The Chinese girls in grad. dept. thought little animal trade thru H.K., the occasional civet or pangolin in food market. One said a hill in New Territories formerly had monkeys in pines & was called "monkey hill" (no specimens).

3 August 1965. Departed 1525 for Delhi via Bangkok. Much calm deep blue sea. Much seemingly uninhabited hilly jungle, & wide red brown muddy Mekong R. India plain brown, the pools frequent.

Journal

4 August 1965

Delhi, India.

Crows, mynab, parrots, larks in city, & many other birds too - why so many? Gray necked crow local. Hot & humid; monsoon season (said to start about July 15). Visited Patterson Ltd., on airport; DD Dharwar still manager, & T. E. Patterson, wife, & children living in house in compound. He very talkative & hard to follow. The plant & expt. about as before, tho P. said going to fix place to "acclimatize" animals 1-2 wks before shipment. He said animals now usually held at ^{farm} near Port Washington, L. I. Also that he shipped monkeys from Kuala Lumpur & ^{near} Bangkok ^(Hokien). Visited Vita Pvt. Ltd. (32 Alipura, opp. Old Secretariat) and talked with elder Mr. Rai & office staff. / Departed 10 p.m. for Dehra Dun.

5 August 1965. Arrived D. Dun about 8 a.m. Flat green region with forested hills bordering. Headquarters of Forest Research Inst. and the academy of Indian army. By taxi 22 miles up switchbacks to Mussoorie, a hill station on ridge at about 6000' elev. Cedrus deodara & Pinus there. Met by Donald Lindburg, U.C. anthrop. grad. student, who is studying rhesus monkeys. Both langurs & rhesus in this area. Various missionary schools. Cool summer resort zone. We drove down to Dehra Dun in afternoon, then to Lindburg's head quarters at Asanoli (?) rest house, at edge of forest (*Shorea robusta* dominant). I took walk in woods & saw a group of *Presbytis entellus*, including one ♀ w. black-faced infant. Also I heard the barking deer - dog-like single barks at intervals sev. seconds; Lindburg said these fairly common. Some mosquitoes evening, but no rain.

6 August 1965. With Lindburg searched for his rhesus study groups of 30±, which he had lost. We saw two

Journal

6 August 1965.

Dehra Dun, U.P., India

other groups during day, in about 6 hours of walking trails. Many birds - lapwings, larks, bawhe, jungle fowl (heard only), peafowl, & colorful small birds. Stayed at shack near dhoke bungalow. I. said he had seen chital, leopard, wild pig in area, & a tiger once briefly. Lindberg spent a few months in field ^{in U.P.} w. Phyllis Jay in roadside surveys of monkeys & search for good study area. Now he is to make ecological & behavioral studies in single area.

7 August 1965. Spent day in field w. Lindberg, & saw large band of monkeys in Sal forest - perhaps 60 in group, tho I was sure of only 20, mostly immatures. Mushrooms being eaten avidly. Saw 3+ pygmy owls, some apparently young, in forest. In afternoon drove thru Dehra Dun (unattractive) to grounds of Forest Institute (imposing; huge park-like grounds), where there were some rhesus groups, & we saw one group of 20± which readily came to food thrown on edge road. We drove several miles out to area of Temli (sp.?) block, then returned. Sal (*Shorea*) about 40-70 ft. high dominant in all the forest patches. No rain all day; occas. clouds.

8 August 1965. Spent morning looking for monkeys; saw no rhesus. In evening departed by train for Delhi. No rain.

9 August 1965. In Delhi, visited Vita Pvt. Ltd. and their monkey farm near Ring Road. Little change from my 1962 visit. Mostly 4-8 lb. animals in gang cages. Adults, 14± lbs., mostly very old ♀♀ (10 yrs. or +), some almost decrepit, and adult ♂♂ too (largest 23 lbs.) looked like

Journal

9 August 1965.

Delhi, U.P., India

lower ranking ones, some slightly deformed (but 1 good 23 lb. ♂, + 2 good subad. ♂♂). Two "golden" ♀♀ 2-3 yrs. old in cages. (One cage about 25 bonnet monkeys, 6-8 lbs. - tails long & straight.) The Indian who showed me around said that their own men merely brought the monkeys & had nothing to do with the actual captures. | Took plane to Bombay.

10 August 1965. In Bombay talked briefly with M. S.

Rai about monkey shipping business. He showed little enthusiasm & was planning to go to Europe this winter for a long stay. He had plans for movie of monkey capture & handling & shipping. | Departed ^{10:30 a.m.} H & A plane on FAA route flew via Karachi, Aden, to Nairobi. Aden area a rocky desert. Cloudy over Africa - did not see the big mountains.

11-13 August 1965.

Nairobi, Kenya.

Talked with D.S.B. Leakey at Coryndon Museum on 11. On 12 he took me to visit Tigon, where Cynthia Barth (+ husband Rivers) run ranch & have 100± monkeys in cages. They also had started collection skins & skeletons. Leakey seemed most interested in taxonomy now, reprod. & behavior later. Cynthia moreish & talkative, but seemed to know her African monkeys. She was to go to Tanganyika in Sept. to census Colobus ladini in a small forest there. Caged animals seemed in fine health & seemed to be her main interest. 2 or + black & white Colobus of 2 forms in cages. An adjacent ranch being acquired to expand facilities. A newly arrived girl from Uelen was to study bones, tho apparently a beginner in this field. Leakey continued to

Journal

12 August 1965

Nr. Nairobi, Kenya

talk glowingly of Jane Goodall & her continuing (?) studies of chimps in Kigoma. Lesley in good health & humor, talkative; I was impressed w. his broad interests & knowledge. / Coffee & tea growing nr. Nairobi.

13 August 1965. Spent about 2 hrs. in late afternoon in Nairobi

Nat'l Park, 10 miles from Nairobi. Mostly grass plains or rolling; some wooded areas. Grant gazelle, Thomson's g., Hartbeest, quagga, wart hog, giraffe (1 area only), baboons (1 area only, nr. giraffes - climb on cars; only 1 troop?), hippos (4 in 1 pool), vervets (nr. hippo pool), marabous. Ostrich fairly common; ♂♂ alone, or mostly. Guinea fowl flocks; francolin or bustards in pairs. / Probably some regulation of numbers through removals. Hedged trees & shrubs, but no severe overgrazing. One jackal seen; it rolled in (dung or urine?).

14 August 1965. Departed 0915 by train for Kampala, a 24 hr. ride, going across Rift Valley & over 9,000 ft. level. Cattle, cornfields, planted eucalyptus & pines & other conifers, patchy forest, occas. native towns. Drier across Rift Valley, & 2-3 large lakes seen. Few birds seen & no wild mammals.

15 August 1965. Sunday. Arrived Kampala. To Makerere Un. Coll. & met Dr. Jane Thurston, & later T. Powell, Owen, & others. Dr. Delany in hd. dept. Stayed at Univ. guest house. / Climate [Etiopia] warm & muggy; Puerto Rico-like. Bate (fruit) said to hang in eucalyptus at some seasons.

16-18 Aug. 1965. Business & shopping in Kampala.

19 Aug. 1965. Obtained 1960 Holden station wagon thru Cooper

Journal

19 August 1965.

Kampala, Uganda

Motors on repurchase deal. Sent Japan budget request to Delta.

20 August 1965. Departed 0915 for ^{Ft. Portal} Kampala, via Mulanda. Road ended long before Mulanda; then after corduroy. Patches of trees but country broken up by crops, burning, bananas, corn. A long gas drive, about 206 km mi. Met Bheirige in his store (source of local info. + goods). Stayed Hot Springs Hotel. Barter, 2 modern hotels, adequate imported food here.

21 August 1965. Saturday. To the central office bld. nr. Mts. of Moon Hotel. Met Kingston, the DFO, + Peter Hay, Game Dept. head. Both friendly Englishmen. Bass + Weir from Pullman had been here not long ago. / With Kingston took drive ^{thru} to Kibale Forest via Kagera Sawmill S. + E. to Mbaraga R. bridge, then W. to Kanyawara. No old mature forest, but some recent, some being cut, + some large areas of elephant grass. Kingston gave permission to camp at Sebitoli or Kanyawara forest station. We went to former, where a small house available (no utilities). / Visited Bill Pridham at Kigamui tea estate, where he had been since 1932. He was friendly, formerly of game dept., + knew animals fairly well. We saw 2 or 3 gae. colobus, + heard them, in forest bordering his tea field. / Pridham said forest much disturbed now by poisoning of some trees, + by cutting. Elephants few now, tho we saw recent carcasses on one road. Hyppos gone from Mpanga R. Guinea fowl + francolin in forest. About 6 sp. monkeys, incl. some chimpanzees, P. said. Raining season starting, tho not so sharp change as nr. Mbarara to S. / Saw mostly white hornbill (*Byramites*?), pr. *Francolinus*. / Met mine geologist, Italian, Mezzan. Saw some blue + red tailed monkeys.

Mod. rain 5-6 p.m.

Journal

(Sebitoli; Kibale Forest)

22
20 August 1965.

Nr. Ft. Portal, Uganda.

In morning watched Colobus alys. + redtails nr. Kigami Estate.
Heavy rain 4-6 p.m. To town for gasoline.

23 August 1965. In morning watched monkeys nr. Kigami Estate. Then
to dam road 1 mi. to Elephant Control Path, walked to Mpanga R. and
1/2 mile up it. River muddy now, brown-gray. Shopped in Ft. Portal.

Cercop.
hoesti

about 12:30, short way N. of Bridham jct., 3 monkeys ran to E. across road.
We heard grunts in bushes within 5 yds. of us, + saw bushes move,
+ finally sounds of running off, but not just trees. Carla K. said saw
one; black w. brown social; ^[prob. = C. l. hoesti] chimps? or red colobus? / Forest guard said
chimps recently seen in area Kampala Rd. just E. of county line;
sometimes crossing road. / Stayed Sebitoli.

24 August 1965. Observed in Kibale Forest on road 5. from Sebitoli, until
(^{ca. 9 mi. W. of Mpanga-Kanyowara rd. jct.})
stopped by mud. Saw ^{C. badius} ~~arranging~~ group. Saw, black shrub-sized
mammal run across road (gorilla?) nr. Njugaturu crossing. Saw
hornbills, turacos, in patch more mature forest E. of Kanyowara;
last reached by dirt road for about 8 mi. SSE of Ft. Portal, then 3 mi. E. also
blue, redtail, + b.w. colobus in forest. / Rain now + again, light, 4:30 p.m.
Nearly clear 9 a.m. but overcast noon. / Trees in flower - Cry-
thina conspicuous, bright red, leafless. (See birds feed.). Also
Sporobolus, red flowers, w. leaves. Some trees w. yellow flowers too.
But generally few flowers. / In Kanyowara forest saw fran-
calin too. Returned to Sebitoli for night.

25 August 1965. We left Ft. Portal 11:15 and drove via Kasese to
Queen Elizabeth Nat. Park. Talked w. Chief Warden, I.E. Ross. Saw
usual game - elephant, hippo, kob, waterbuck, warthogs, +
others, and 8+ hyenas about 7:30 p.m. on Royal Circuit. Stayed

Journal

25 August 1965.

Queen Elizabeth Nat. Park, Uganda.

at Students Camps. Hard rain evening.

26 August 1965. We crossed Kazinga Channel on ferry (1 car). Then drove S. across ~~Nyamwe~~^{ene} R. nr. Lake Edward, at corner of Maruma gambo Forest, then S. across Kaigdi R. (baloom about 1 mile S) + to fishing village of Ruwashema. Then ~~drove~~^{drove} to Katungura. Many hobs on flat green burned area. Rain prevented visit to Lake Nyamusungu, where said to be colobus + other monkeys. Back to Kabatara, then N. on Crater Track + camped nr. Baboon Cliffs, at top edge one crater. Some rain at night. | Saw 22 baboons in eve. on open ground at Baboon Cliffs hilltop. | Hundreds of warbon nr. Kabatara + Ruwashema.

27 August 1965. Drove on to Kihango + N. to Kamukhwezi hills on Lake George flats. Many wart hogs; also buffals, red bush, elephants. Thick grass, shrubs; little apparent traffic. Returned to Ft. Portal + Sebitoli. Brief obs. monkeys evening. Hail at night.

28 August 1965. Saturday. Obs. monkeys morning. Visited Pridham. Collected forest mounds (CBK 3000)

29 August 1965. Sunday. Counted monkeys along road S.

Pan trogl.

of Kagera in morning. Carla K. saw 1 chimpanzee nr. Nyugata River 1030, about 15' up, hanging on branch. We first well saw Colobus alysianus calling Rain.

30 August 1965. Camp work, shopping, visit Pridham.

31 August 1965. Departed mid-morning via Ft. Portal with W.O. Pridham + sons + Antonio + Mezzan for Toro Game Reserve, 32 mi. from Ft. P., at about 2000' level. Camped at Waza Camp (tamarisks; 1/2 mile before steel bridge, within 1 1/2 mi. airline of Uganda Wildl. Devel. Lodge.

Journal

W. Uganda

31 August 1965.

Toro Game Preserve, nr. Ft. Portal,

Grassy plains with riverine forest & scattered trees. Large nos. kob, but also waterbuck, kungoni, elephant, & many buffalo (one ^{herd} 200±). Hunting allowed under permit & payment. We saw blind at kob territorial ground where H. Breckner worked. Giant ground hornbills striking, feeding on ground in open. A few reedbuck in kob groups; kungoni with Defassa waterbuck. A few warthogs. At night heard hyaenas close, lion far. Thunder but did not rain. Few inhabitants, go not overgrazed, & very pleasant area to work, tho muggy at times. Pridham took us game watching Aug. 1.

1 September 1965. Pridham took us on tour of much of area.

No ostrich, rhino, ^{Zebra,} quaffer here. Kob most abundant. Hundreds in sight at once occasionally. Saw colobine monkeys in riverine trees near Waza Camp, & heard calls in evening. ^{Baboon} Balloons & grunts said to be present.

2 September 1965. We drove about 12 miles to edge of Lake Albert, hired large outboard motor boat, & went fishing (trotting) for Nile perch. Caught but 1, about 2 lbs. Rocky escarpments & spectacular falls near mouth Nile River. From boat saw 3 bands vervets & 2 bands (3 to 6) Colobus alysianus in broadleaf trees along sloping shore. Also 1 dead hyena, many fish eagles, 2 lizards, lungfishers, pelicans, small birds. Water muddy; level had risen 20± ft. during last few years, Pridham said. No other line fishermen seen. Departed boat landing about 2 pm; car trouble delayed return to camp. Koford family stayed overnight, while others returned to Ft. P. in evening.

Journal

- 3 September 1965 Toro Game Preserve, nr Ft. Portal, Uganda
 Lion seen, + hyenas close at night. Rain about 4 a.m. + for a few hours after. Visited the hunting lodge, from where we saw + gss. colobus at once + heard another, in river forest - good place for leucis territorial census? Returned to Ft. P. + Schitli camp.
- 4 September 1965. Pridham's left for Paraa. Elephant said shot 5 mi. down road last night; we went to area + saw many tracks but did not find body. Camp work.
- 5 September 1965. Sunday. With Antonio Mezjan, drove S. thru Kibale Forest to Bid Bigodi. Patchy forest + elephant grass. Said once grazed, but grazing ceased because of rogans. Then N. to Kigarama, S. to area of Kasenda, where road passed between 2 crater lakes. The slopes of crater mostly well forested. We saw no monkeys, but Mezjan said he had seen baboons, more than once, cross road nr. county line (Dura R.); a fair patch of forest here. Returned to Schitli camp. / Snap trap in woods nr. Pridham's road caught 1 mouse during day (KAK No. 1). / Unsuccessfully looked for carcass shot elephant.
- 6 September 1965. Camp jobs. Shopped in Ft. Portal. / Yesterday acquired 2 Chameleons taken nr. Kigarama. Still have large bat found in forest on Sept. 4; yesterday it gave birth to dead inf. (preserved). / In evening saw chimpanzee nr. Njigata crossing, + ad. ♀ w. yearling (?) bushbuck on road nr. mile 5.0 on road S. of Kagera Saw Mill. / Good view of white-throated monkey. [= L'Hoest's green monkey]
- 7 September 1965. Departed 6 a.m. + drove to Kampala. Left animals, visited in zool. dept., shopped. Camped nr. Entebbe at edge Lake Victoria.

Journal

8 September 1965

Entebbe, Uganda

Visited Sylvester Ruwera, Game Dept., Entebbe. Saw monkey skins & found my "mangalay" = Colinus bodini, & the black monkey w. brown back & white throat = C. l. hoesti. Camped.

9 September 1965. Shopping Kampala. Bought telescope & small tent. Drove N. via Bombo toward Masindi & camped along way.

10 September 1965. To Masindi, & Murchison Falls N.P. Little game compared to Q.E. or Toro Preserve. Very little shade in hot country. Roads rough. Drove on Bulgi track & saw fair numbers mammals. Visited the falls; oh but disappointing.

11 September 1965. Talked with Chief Warden (?) Wheaton (?) about monkeys. He said that K.R. L. Hall had studied ^{Patas monkeys} ~~them~~ within a mile or so of headquarters. He sent a boy with me & we walked 1 1/2 hrs. but saw no Patas or other monkeys. Drove to Masindi, then W. toward Buticha. At mi. 26 fr. Masindi (18 from Buticha) talked to forest guard who told me Marler had stayed in rest house about 1 mile to W. / Forest in this area thicker foliated than Kibale, but much cut over, replanted, & variously mixed up. Hot & humid compared to Kibale, & far from supplies. Looked at Buticha, then drove S. thru Hoima & camped.

12 September 1965. Drove on to Kibale Forest & stayed at Sebitoli forest station. Rain in afternoon as usual. Sunday.

13 September 1965. Watched Colinus along Samuill road in morning. Rain started 3 p.m. Saw red colinus groom a redtail! Saw 2 white infant colinus.

14 September 1965. Obs. along Kagera SM road. Saw Cercopithecus

interspec.
groom

Journal

14 September 1965

Kibale Forest, Torq Uganda

nr. mi. 5.5. Black & white hornbills common in pairs.

15 Sept. 1965. Put 1 mi. marks along road S. of Kogera Saw Mill.

16 Sept. 1965. Visited D.F.O, Kingston, in Ft. Portal. Rain in morning. Drove to Kanyawara-Mysanga road about 4 p.m. but saw no monkeys there (on E-W road). No rain p.m.

17 September 1965. Put more marks along road. Watched groups in Kigami Estate area. Saw 13 Col. boduis in eve. No rain.

18 September 1965. Watched 2 1/2 hrs. morning on Pridham road. Moved from forest station to Pridham's. Clear morning; saw summit Ruwenzori. Brief road survey eve. No rain.

19 Sept. 1965. Sunday. Walked Elephant ^{Control} Path 2 hrs. morning. Watched monkeys Pridham Road afternoon. Rain ^{for 1/2 hr.} about 5 p.m. Saw 3 Colobus disps. on ground on road. Rain for 1/2 hr. about 4 p.m. Hard rain 4 p.m.20 September 1965. Saw band 20+ Colobus boduis. Trip to Ft. P.

21 September 1965. No rain. Obs. nr. Kigami estate + Kogera road.

22 September 1965. Obs. nr. Kigami estate + Kogera road.

23 September 1965. Same. Rain afternoon. Both red & black & white Colobus consistently in forest at NE edge Pridham's tea estate.

24 September 1965. Collected 3 teeth from elephant skull nr. mi. 5.7.

Eve. walking census 1.1 to 2.1. Good view C. l'heati etc. Rain p.m.

25 September 1965. Saturday. Morning sunny, 1/10 alto clouds; Ruwenzori summit visible from Pridham house. Morning census mi. 1.0 to 2.1. No rain until night. Kristi saw a serval cat on road near mi. 2.0

26 September 1965. Overcast. Watched monkeys on roads & trails morn.

Drove to 5.7 + return eve. Afternoon calm, alto stratus.

Journal

- 27 September 1965 (Mon) Kibale Forest, Toro, Uganda
Observed monkeys near roads morning. Census 1.0 to 2.1 ave.
- 28 September 1965. Still at Pridham's. Alto stratus overcast; showers
11 a.m. Saw 3 chimpanzees cross Pridham's road. Watched
monkeys along Samuel road.
- 29 September 1965. ^{Up to 10 teracos} in single coffee bush.
Watched monkeys Kogera SM road.
- 30 September 1965. Same. Toro Game Preserve, Toro, Uganda
- 1 October 1965. Overcast & rain morning. Departed Kingani estate
1030 for Toro Game Preserve. Rain morning. Arrived 1:30 p.m. Saw Colobus alys.
and Papio. Camped 1/2 mile downstream from Wana R. bridge, at Bushman site
50 yds. from edge mixed forest bordering river. Heard lion, hyena. Saw waterbuck,
kob, reedbuck in area. Shower in afternoon. Mosquitoes at night.
- 2 October 1965. Rainy morning, w. alto stratus overcast. Saw Papio & Colobus
alys. near camp. Camp to the game lodge = 2.5 mi. Obs. some from
area of lodge, where good patch riverine forest. Rain eve.
- 3 October 1965. Obs. near camp & lodge. Rain afternoon.
- 4 October 1965. Overcast. Obs. near lodge & camp.
- 5 October 1965. Same. No rain. TO Kibale Forest, Toro
- 6 October 1965. Departed Toro Game Preserve & drove to Ft. Portal,
then to Kingani estate (Mr. Pridham's).
- 7 October 1965. Evening obs. n. Kingani estate.
- 8 October 1965. Ft. Portal trip; car repairs. Evening obs.
^{Uganda independence day.}
- 9 October 1965. Corresp. & office work. Much rain afternoon.
- 10 October 1965. Sunday. Drove to Ft. Portal & S. to Dura River, about
18 miles. Looked for monkey there. Then to Kanyawara forest station, + 5 miles
into forest. Returned to Kingani Estate for night. From ranger's house at Kany-
wara, .3 to first forest patch of 1.2 miles; then road thru alt. patches forest & grass until
3.5 miles fr. house, and .8 mi. in a small bridge.

Journal

11 October 1965

Kibale Forest, Toro, Uganda

Rolf & Keisti watched hard colobus morning. I, brief survey on savannah road. Shower midday.

12 October 1965. Foggy morning. I read documents in office of D.F.O.; kids watched monkeys morning. Watched along road eve, & saw 3 chimpanzees. Rain afternoon.

13 October 1965. Drove to Entebbe & camped by L. Victoria.

14 October 1965. Visited Tennant & Rhweya in Game Dept; Dr. Williams at Virus Research Centre - good base for operations, w. labs, cages, monkeys, incl. many rhesus.

15 October 1965. To Kampala. Visited Rawell, Delany, others at Makerere. Visited Ministry Internal Affairs, Entebbe.

16 October 1965. Saturday. Visited Rawell, Delany. Then drove to Jinja and camped edge golf course.

17 October 1965. Drove to Tororo, thence to Mbale. About 20 miles before Tororo, road passes thru a few miles of forest, said to include monkeys. Drove to Budadii and Basulani, takeoff place for climb to Elgon summit. Rain. Forest started 1000' above highest pt. reachable by steep dirt road. Many aborigine people along upper road. Returned to vicinity Mbale & camped.

18 October 1965. Visited D.F.O. in office near Post office in Mbale. He gave permission to use rest house at Kaphwata, softwood plantation on NE side Mt. Elgon at edge forest. Drove there (65 miles) on the mt. road toward Kenya. Pretty waterfalls over cliffs along way. Up & down dirt road, muddy when wet,

Journal

Uganda

18 October 1965.

Kapkwata, Mt. Elgon, Sebei, a steep in parts; barely made it in sta. wagon w. load. Pines & cypress planted to sapling size on many acres (100+?). Walked to "fire tower," & saw & heard monkeys from there. Fine views of forested slopes.

19 October 1965. Rain all day, but stopped mid-afternoon. Then to "fire tower," a 150' rock outcrop at upslope end plantation, & counted monkeys.

20 October 1965. Overcast but no rain. 0930 to 1 p.m. atop Fire Tower, counting colobus. Rain about 2 p.m.

21 October 1965. Spent afternoon in area of fire tower. A trail starts there & goes about 5 mi. into forest to W & NW; I followed it $\frac{1}{2}$ hr, thru 30-50' trees & occasional small grassy openings. From tower one sees black "raven" with broad ^{wings} tail, short tail, & feathered nares. Sent man by bicycle to Bulawa for gasoline. Little rain night.

22 October 1965. D.F.O. arrived & sold me petrol. Broken clouds today; driest yet. Drove to Mbale, 65 mi., without difficulty. Later drove via Sericho toward Moroto about 45 miles, into dryish thorn bush area & camped. Many doves, bird flocks. Heard lion at night to N.

23 October 1965. Drove N. across Mach River into Dabosien game preserve. Buffies fairly common near road; saw 3-4 yps. To 11, w. yps. Eat delicately at the 10-15' tall spindly thorny trees (w. ants & galls numerous). Plains not open but have ^{small} trees 5-20 meters apart. Also saw hartbeest, oryx, zebras among trees. Some rocky hills w. caves & bird lined holes. Then through village of Namulwa, near cotton estate. Villagers very black, women w. bare breasts & many metal neck rings. Men naked largely, esp. in genitals, & nearly all boys naked. Men carry walking sticks

Journal

23 October 1965

Nr. Mt Kadam, Karamoja, Uganda.

and a tiny (3" x 6" seat?) 3-legged stool in one hand. Some nose + lip ornaments, beaded on arms, skin clothing - rather primitive, & only 60 mi. from Mbale. | Road close to mt. on N. side. Scattered trees lower slopes, & forest patches on higher slopes, but mostly cliffs, many vertical - fascinating but difficult mountain. | Returned to Mbale & drove on to camp 20 miles toward Jinja from Tororo, in small forest of 50' trees. Hard rain late afternoon.

Sunday

24 October 1965. Sunshine & broken clouds. A group of 7 men

laden w. rope nets, sticks, spears, walked by our camp - poachers? or monkey trappers? Monkeys probably here, tho saw none.

Many bird calls - turacos, hornbills. | In area nr Kadam, many cattle, mostly white zebu w. ribs prominent, herded by naked black dogs. Euphorbia trees some sites. Saw no game outside of preserve.

25 October 1965. Drove to Kampala. Camped Entebbe.

Entebbe, Uganda

25 October 1965. Visited F.R. Manu of Vervets (E.A.), monkey

collecting company. Formerly operated in Kenya (Nairobi). Ships mostly vervets (to 600/mo.), but has some Brazzias, redtails, in cages. Puts injured & some spare on small offshore island near airport. Has 10± fish eagles in cage. Helped Dr. Vickens of Lederle make a film in Kenya. Willing to collect special material. Says vervets bite tails of others & selves, injure selves if cage too large. Ships to Beijing (Germany), Stockholm, Japan mostly; also to USSR & U.S. drug cos. Operates by setting up camps, shows locals (to 200) how to make box traps of sticks or wire, pays 5 sh. each for monkeys. Vervets caught w. vid box traps, not nets. Friendly, German, about 55 yrs. | At Kampala,

Journal

25 October 1965 (Mon.)

Kampala, Uganda.

Dr. Delany told me that he had applied to Minister Internal affairs for collecting gun permit, for me + dept. zool. Camped at Entebbe.

26 October 1965. Business in Kampala. Then drove to Fort Portal and stayed at Kerigami tea estate.

Kibale Forest, Toro, Uganda

27 October 1965. Office work, + evening monkey census. Relocated "snag tooth," "stump tail," + some familiar groups of Colobus alyssinicus. Overcast but no rain.

28 October 1965. Sunny morning. A few Marthamia trees now have long ^{their} fruit pods. Nettles have large flowers. An Erythrina tree, leafless w. red flowers when we arrived about Sept. 1, now fully leaved, w. no flowers; others of same sp. ^{have become} bare w. red flowers. Evening census along road.

29 October 1965. Heavy rain (1.87") night. Mr. Pridham said area near estate logged about 10 yrs. ago, + that the forest patch ^{now} on NW side of estate similar to that cut. Also, he said much poaching of monkeys in area about 2 yrs. ago, natives using skins for bags, bicycle seat covers, etc. / Stratus clouds a.m. Watched + counted monkeys to 1030. Rain noon.

30 October 1965. Light rain on + off most of day. Census of monkeys evening. Tursac fed same Marthamia tree as Colobus alyssinicus, tho later.

1 November 1965. Sunday. Cumulo stratus morning. Rain 11 a.m. Monkey census evening. Few Marthamia flowers now; many of these trees w. long pods dangling.

2 November 1965. ~~Go~~ Watched gp. 40± C. brodiei morning. Rain early aft. Evening road census.

Journal

November 3, 1965.

Kibale Forest, Toro, Uganda

Clear morning; ^{10/10} alt's status by noon. Road survey of monkeys.

November 4, 1965. Sunny after fog lifted. Road survey monkeys. Relocated "link tail," now w. infant in gp. (C. alypsinicus). Drove to 5.8 + return; now logging to E. there. Walked ^{new} tractor path to W. from 3.8 + saw no monkeys in 1/2 mile midday. Saw C. l'haesti again. / Forest Mgt. - talked w. B. Kingston. Cut near Bridhams about 1959. about 5 yrs. after do strip count main comm'l species (4%?) + use to judge treatment (felling, g thinning, girdling, poisoning). Short lived trees like Trema not poisoned. Poison by spray on bark, girdle + spray, remove 12" bark, etc., depending on sp.; 2, 4 D + 2, 4, 5 T. (Changes Cutting now about 22 trees/acre; goal is 40. Formerly cut less. Present cut about 1/2 of standing trees of suffic size). K. things will result in even aged closed forest of the 15 valuable sp., some all on single acre, but prob. 1 or 2 (Neutoma & Fagaropsis?) mostly. K. said V. Reynolds published that forest dept. poisoning cheimpe (food?) trees, but K. says V.R. did most studies in heavily poisoned area. / In morning flock of 200 or + storks (Ciconia nigra?) roared to S. over road, 1000 ±' up. white bellies; red legs extended beyond tip tail (black rectrices). Nov. 2 + today saw 2 chies in swamp by O.B.W. Braun; iridesce. green on dorsal folded wings; red area top base bill; near white line along jaw on cheek.

Nov. ¹⁺⁵ 5 + 6 - see Monkey Census sheet; when entered by mistake. ^{p 6} .87" rain midday.

November 6, 1965. Saturday. Walked along Heria black forest road for 1 hr, to area damaged eucalyptus. Photoed, + returned. Saw C. alyps; C. boduin, red tail, blue, mangoshey in Heria black. Last stripped bark. Good monkey trail but many biting flies. Rain 12-600. Evening census Samuel Road.

Even Dates
1 day
ahead

Journal

7 November 1965

Kibale Forest, Toro, Uganda

Sunday. Rain midday again (.75"). Eve road census. Near K-8 sign saw 2 gray parrots (red tails) in green *Erythrina* tree; cut off some leaves.

8 November 1965. Departed 9 a.m. & drove to Kampala; camped Entebbe.

9 November 1965. Found out 3 days for Kenya vis. Visited Makerere.

10 November 1965. Visited office of Commissioner of Forests (Stuart Smith), Entebbe.

10 November 1965. To mangrove study site in forest N. of Lugazi w. Neal Cholmondeley, Denny, & others.

12 November 1965. Returned to Kampala. Got vis. Departed for Kenya.

13 November 1965. Drove to near Maiben & visited Richard Leather, cattle rancher. Camped ^{his ranch} on Maiben River (15' wide) where there was mixed riverine forest 100± yds. wide containing colobus & blue monkeys. About 6000± ft., cool, semi-arid. Large pigeons common. Windy (or oibi?)

14 November 1965. Sunday. Shot pigeons. Saw 2 duikers in cattail areas. Heard colobus at night. Counted monkeys. Saw guinea fowl and rock hyrax near Leather's house on Maiben River. Windy still.

15 November 1965. To Maiben, talked with local people. Pleasant English community of 20 or so adult whites.

16 November 1965. Drove via Eldoret to Nakuru. Saw the few million flamingoes on Lake Nakuru; you can drive within 100 yds. of the birds at many spots. No visible wardens. Rain midday; Aberdare & Mt. Kenya in clouds. Drove on to Thompson Falls, thence ^{toward} through thorn bush cattle country ^{to} Nanyuki. Saw 2 jackals (camped). ^{all} ~~hartebeest~~, many steinbucks (?), in thorn bush country.

17 November 1965. On to Nanyuki. Rain midday. Streams high & muddy; roads muddy. We went out in land rover with Peter Mann-Jones, young professional hunter. He was to shoot eland & ^{zebra} ~~ox~~ damaging crops along road toward Isiolo. He But hunted in grassland w. scattering cypress & other trees,

Journal

17 November 1965

Nr. Nanyuki, Kenya

and shot only an ouyx. I saw about 4 p.m. at about 500 yds. a large leopard, in stalking walk at edge brush in grass. Probably came toward ouyx carcass or descending vultures. About 20 were in trees or ground near carcass by time we reached it, perhaps 20 min. after shot. Peter went after the leopard but did not get a shot.

18 November 1965. Still raining, so proceeded to Nairobi. Visited

A. Harthorn in vet school (attractive modern buildings), as well as Dr. Monte Fran Davis, Dr. Udall from Ft. Collins ^{met} Dr. Paul Martin from Univ. Ariz. at Leahy's lab.

19 November 1965. More visiting. Ticket + inoculation insurance.

20 November 1965. About 10 rock hyrax in pen at vet school, nr. Dept. Zoology. Saylor (sp.?) studying them.

21 November 1965. Sunday. Went with Leslie Braun + Alain Gille to visit site crowned eagle, martial eagle, + other nests near Embu.

22 November 1965. Departed Nairobi. Camped nr. Namanga, to ^{south} south.

23 November 1965. Drove to Arusha. Visited John Owen. Then drove toward Serengeti + camped nr. Ngorongoro.

24 November 1965. To Seronera, Serengeti Park. Camped.

25 November 1965. To Olduvai Gorge. Then past Ngorongoro and camped nr. Lake Manyara.

26 November 1965. Drove toward Nairobi. Stayed at Hapcraft ranch near Athi River

27-28 November 1965. Stayed at Tigris primate center near Lemuru.

On 28 (Sun.) climbed Mt. Longonot + viewed crater.

29-31 November 1965. Fort Stayed at Hapcraft ranch (Kenya plains).

Saw Thomson gazelles, Grants, giraffe, kudu, jumping hares.

Journal

1 December 1965

Ken Plains Est., ATHI River, nr Nairobi, Kenya

David Hapcraft showed us 10 acre + 150 acre pens for holding gazelles. 6 in ^{10 acre} pen had been killed by jackals (?) in 1 night. Now trying to catch more in big net corral. We saw loose band 30± giraffe, & near them 25 eland, ^{the} on ranch. David now 6 mos. along in proposed study of tsetse-cattle competition, tho he seems to know little of either animals or range, on 3 yr. \$60,000 NSF project (Cornell). (NSF-sponsored)

2 December 1965. Departed Nairobi about 4 p.m. on Air India to Bombay. On to Bangalore Dec. 4.

4 December 1965. Arrived Bangalore. Went to end of IUCN meetings at K. Univ. Departed on bus for field trip to Khao Yai Natl Park. Returned to Bangalore on Dec. 6. Heard gibbons calling in park, esp. in morning, but saw none.

7-11 December 1965. Visited Dr. J. T. Marshall at Seato med. res. lab. also Dr. N. Negus, working on Tupaia and Hylabates reprod. Saw tupaia colony in small cages; about 50 raised so far, some with ♂ left in cage (2 nest boxes). Animals larger than the T. glis we have in P.R. from Kuala Lumpur. Visited malaria research stn. at Pra Buddhalat, about 2 hrs. from Bangalore. 15± gibbons in large cages. No reprod. yet. Said have ~~not~~ succeeded in infecting splenectomized gibbons w. P. foliiparum (several people at station have had malaria). Small town + nice small facilities. Visited + talked with J. L. Harrison, Univ. Singapore, and w. Elliott Madure, bird man of SE Asia pathology project.

12 December 1965. Visited w. Marshall the open billed stork colony up a river near Bangalore. Some storks mounting; 1 to 3 eggs in some nests; some carry twigs + greenery to nests. Tame birds, ideal for obs. Saw 1 + monitor near ~~same~~ river.

Journal

13 December 1965.

Bangkok, Thailand

W. Negus visited animal "farm" run by woman. In small yard many wood & wire cages including 200± mynahs, 500± finches, hornbills, other birds; butterflies, crickets, 200± stump-tailed macaques, 50± pig tails & rhinos & M. irus, 20± gibbons, a few langurs, & others. Crowded, & a few dead in cages, but much help in cleaning & feeding animals. Many adult stumps & pig tails. Most ads. 1 or 2 to small cage. Seato lab buys here & thinks ^{best dealer} ~~one of better~~ about 50 Tupaia in single cage, most hiding under evulsion on floor. / On Dec. 11 (Saturday) morning visited market place in Bangkok. Included many live animals for sale: 10± small gibbons, Presbytis, mouse deer, tree squirrels, Tupaia, flying squirrels, parrots, cockatoos, crickets, and others - apparently no restriction on this traffic, & many animals in poor condition. / All Americans say that gibbons taken by killing mother, almost exclusively. / A student, Miss Bertrand (French), studying Macaca speciosa in the field in S. Thailand, in area where they ^{come} to feed on rice crops.

14 December 1965. W. Dr. Negus, Peter Marshall, & others, visited island of 200± acres off coast S. of Pattaya, about 2½ hrs. drive & ¾ hrs. boat ride. Long sand beaches, coconut lined, & clear blue tropical water on mainland; much devel. for tourists & water skiers. Island about 70' high, nearly solidly covered w. shrubs & trees, some to 80'. In Seato lab-Delta private center arrangement, hoped to establish colony of gibbons here. I think island suitable, tho a little dry & trees shorter than usual gibbon habitat. About ¼ mile offshore near Thai naval training school; pleasant area. Many more islands in the general area - single rocks to 1000 acres +.

15 December 1965. In afternoon took train to Chiangmai, arriving

Journal

16 December 1965.

Chiangmai, NW Thailand

morning, 1030. Visited zoo, where several species macaques. One rhesus-like with reddish anterior back - 2♂♂ in cage poked finger in our vagina, then licked finger, as if eating blood. Harold Young, director, said "rock macaques," found near rocks, & had heard they were *M. assamensis*. He said in one area there were "long tailed rhesus" monkeys too. He told of hearing various times of a large ape in Burma border area, groups up to 21. He had seen tracks, larger than his footprint, w. chimp-like big toe at side. He had been 14 years in region, knew local country & hill tribes well, taught jungle survival to troops. Said much destruction avoided through hunting; no gibbons now on Doi Suei, where formerly common, or in area where Carpenter studied (in Chiang Dao?). Thought disappearance of animals from hunting rather than deforestation. His son Gordon to move from Bangkok to Chiangmai soon. Harold heavy set, about 55, w. much love but little scientific knowledge. Chiangmai next to hills with oak-like forest covering, a wetter zone above apparently. Underdeveloped compared w. Bangkok. Fine university buildings, the univ. starting 2 yrs. ago. Stayed at Deats lab field station, near university & zoo.

17 December 1965. Rode up to Wat detup, about 5500 ft., on Doi Suei. Rain, clouds. Few birds seen. Returned to Chiangmai & train to Bangkok.

18 December 1965. Tried to leave for Australia, but plane overlooked so stranded in Bangkok. Put up at hotel by Pantar.

19 December 1965. In eve flew to Singapore, & eve of

20 December 1965 ^{then} flew to Perth, arriving very early morn.

Rented VW combi. Visited CSIRO at Univ. (Nag. Netherlands), and Dr. Serenety, recently back from mutton bird banding at Bass Strait. Spent several days touring to S. of Perth, among giant *Eucalyptus* nr. Pemberton, Cape Leuwelyn (sp.?). Visited Eric Lodge at ranch

Journal

December 1965

Australia

near Bayup Creek; enthusiastic amateur. Spent night at Dryandra and saw "kangaroo rat" marsupial. Returned to Perth. Flew to Melbourne & visited Dr. A. J. Marshall at Monash Univ. Then to Canberra, where stayed several days at CSIRO wildlife headquarters. Spent most time with Ken Myers. Took one trip of 3 days to the outback north of Broken Hill (Calendary area) and saw kangaroo, emu, wedge-tailed eagle. We shot rabbits for stam one night; all night job to get about 30. Stayed with Geoffrey Sharman in Sydney a few days (he joining U. of NSW). Then flew to Brisbane. Later train to Gladstone, and boat to Heron Island, where stayed Tues. to Sat. & saw many nesting green turtles, noddies, & shearwaters. Returned to Brisbane, rented car, & drove to Lamington forest near Beniva-berra - a rain forest not ^{unlike} ~~unlike~~ Neotropics, with few Eucalyptus. Rain & cold. Descended to Gold Coast area for beach swimming. Then back to Brisbane & flew January 28 to Hong Kong. Jan. 30 on to Japan, where landed at Osaka.

Journal

30 January 1966

To Inuyama, Aichi, Japan

Arrived Osaka 1405 on Cathay Pacific from Hong Kong, with Relf, Carla, Kristi. Met by Azuma, Kayama, Kawamura. Taxi to Osaka, & train to Nagoya, local train to Inuyama. Dale Arvey of NSF there.

31 January 1966. With Arvey & Azuma, conferred w. Kawai & others at Japan Monkey Center.


1-3 February 1966. Worked on accounts & work plans at JMC. Still no boat or shack built at Shimohita, ~~except~~ but at Takago and Koshera work going as planned. Azuma & Kayama had spent Nov. 16-29 in Tsugara Peninsula area, where latter saw monkeys in area nr. Kanita. No phenology done at Isogiyasu. But nutrition samples collected once in fall at Takago, Shimohita, & Koshera. Kawai had used \$1000 advance from me toward construction bldg. on Koshera, where Yashiba working, so many other things went undone because lack funds.

4 February 1966. To Nagoya & Takago by train. Correspondence, office work, stopping to February 8, when departed for Aomori. In Aomori Feb. 9-15, during which rain & snow every day except last. February 16, 1966, to Wakinosawa by train & bus. Then car to end road & walked to Kurodomari in strong cold wind. Azuma reported no field work possible until 15th. He had heard apparent monkeys N. of Kaizakii valley, & fisherman reported seeing some on shore about 1 mile N. of Kurodomari twice recently, within 10 days. Monkeys nr. Kurodomari occas. in Jan. to 29th. Azuma says last fall Mori spent about 10 days looking for "5. troop" farther north and saw some. Weather instruments read at Kurodomari school since Sept. 1, nearly every day, by schoolboy. Azuma says fishermen say less snow than usual this winter, but ^{extra} 3 1/4 cold snaps Dec. & Jan.

Journal

17 February 1966

N. Kusodomari, Aomori-ken, Japan

With S. Azuma, walked K. to Kaizaki canyon, up to top of W & back to K. Snow 1-2' in canyon bottom; <1' on ridge. shed + 6°C. 1100, + 3° at 1300. Az. said saw 1 monkey to ridge; gone when I arrived. We saw 3 Capreomys red-brown cranes, with half-grown young, sta. yds. distant on open rocky point, looking at us, from them (Azuma photoed, 35mm). Photoed some trees. Carpinus has many dry leaves clinging. of Acer mono (tree 2A) for analysis; some bark eaten prob. by monkeys, on branches <1" diam. Bark section of 1" diam. trunk of small Persea Thunbergii, wood, shape of cut bark , prob. monkey work. Also saw barked places, recent, on Kalopanax branches, near ridge; branches 1/2" to 1" diam. (photoed). Took various general views to show winter state vegetation. Only Cryptomeria, Juniperus (small shrubs), and Thuyopsis were green. / Az. said local employees had been putting monkey provisions in Kusodomari, rather than Kaizaki canyon, so ineffective in keeping monkeys in Kaizaki. / The big trap never completed; brought to food shed area but no wire at ends, & now plywood doors swelled tight shut. / Wind today from NE, so, ^{near} shore water not rough, & ^{one} could have looked for monkeys from boat. / Stayed Kusodomari for night.

18 February 1966. Hiked to Kusodomari & took boat to Aomori, arriving about 1200. Stayed at Sei Yo So (ryokan).

21 February 1966. With S. Azuma (+ wife) took 0920 train to Muriyama on Tsugama Penin. Visited Forestry Office. They sent

Journal

21 February 1966

Tsugaru Pen., N. Honshu

us by jeep to Minami-mata, forest station nr. Mesukawa, etc.
 About 1' snow there. Up canyon ^{to S.} & some cross ~~gully~~ ^{gully} then
 saw no sign monkeys. Azuma said 'men reported'
 a few times in canyon NW of Minami station.

22 February 1966. Walked 2.4 km. up road along Nishi-matsumae
 to experiment station, which not manned now. Thence S. up
 canyon walked last summer for about 2 km. in snow on
 slis. No monkey sign. Commenced snowing & colder, so returned to
 Minami about 2 p.m. Azuma had questioned people & said a logger
 said heard monkey over this winter up Minami-mata. So, no leads
 on location monkeys. At Muimaya said some reports to U. since
 last October, where Azuma last was at Muimaya.

23 February 1966. Light snow all night. Skied down to Muimaya
 on road, 4.6 km. Train to Aomori. Took 2020 train for Sendai

24 February 1966. Taxi from Sendai to Shinomaki (2500 yen). Then
 0920 boat to Kurayama. Cold but few clouds. Walked S. along W.
 slopes of island, then back N. on ridge, & W. in vicinity hotel. No
 sign monkeys, tho possibly heard once. Stayed at the Ryokan at
 the shrine. Girl on staff there said 4 monkeys nr. ^{shrine} ~~shrine~~ on Feb. 8.
 There were now 4 in cage (8' sq.), 1 old & on chain, 1 free ad. ♂ in
 vicinity of shrine.

25 February 1966. Warmer in morning; cirro stratus. Hiked up
 canyon to E. of shrine & saw at least 8 monkeys near ridge.
 Deer - a group of 40±, many w. antlers sawed off, fed daily nr.
 shrine. Coats rough & ugly, & animals fat. Away from shrine
 some antlered leaders, some w. 4" spikes. Conspicuous long white

Journal

25 February 1966

Kinkazan, Miyagi-Ken, Japan

hairs of ear erected in alarm, & also hairs of lateral metatarsal gland. Saw 1 gp. of 3 pt. bush w. 2 spiked bushes. Japanese say when deer & buds of *Aralia* (spiny bush), anthers fall (March?). / Mr. Akasaka very interested in monkeys & who works at shrine, away at present. Crows common & noisy. Seel species sparrows seen, & a ^{green} gull, woodpecker. Apparently no squirrels here. Saw one buteo, commoner.

~~26 February 1966~~ (Stayed at shrine ryokan last night). Explored for mon-

keys & encountered group near ridge just N + NW of peak. Saw at least 8 (see M. fuse. notes). Returned to Shinomaki & Sendai, where visited Dr. Schlanger (UC Riverside, geologist)

~~26 February 1966~~ Sendai + stayed at Ryokan.

26 February 1966. Azuma visited Takahashi Dr. (Dr. Kato in Sendai). &

to Tokyo, & ^{Monday} next morning (Feb. ²⁸ 29) took train to Kazusaminto and taxi to Takagoyama. M. Naito

Mr. Naito, USIS photographer, accompanied me. Visited Dr. Muira & gp. 5, now caged in large enclosure

but still ¹⁵ 10⁺ (all ♂♂ save 1 ad ♀) outside. Dr. Kawamura & N. Kayama

also with me. Band in pen had 3 ad. ♂♂, many ♀ & imm. Most

trees in enclosure dead & bark stripped. upper part, tho ^{most} conifers in (some pines barked).

good condition. Tall bamboo green leaves. Monkeys seemed well fed &

healthy. Leader had split R ear, red-faced. Muira said about 79 inside, & occas. one comes in over fence, about 10' wire mesh w.

electric wire stopⁱⁿ. Cage closed Oct. 1, 1965. Kayama arrived for

studies Oct. 8. K. had recently collected samples vegetation

& started to dry them. An NHK television man made brief film

Also visited area of troop A, where Kayama working mostly. of monkeys, Kayama, Kawamura, me. Returned to Niwa village.

¹ March 20 Feb. 1966. With Kayama & Kawamura searched for least

known part of band A, now said to be split into 3 groups.

Journal

1 March

~~20 February~~ 1966

Takago area; to Tokyo, Japan

Local woodcutters told of seeing ^{40±} groups, in area where no monkeys before the group split. Area about 4 km. N. of gp. & feeding area. Area of deciduous trees & shrubs, but some grass & forbs (^{2g} *Plantago*) green, & area of crop fields green. Also green bamboo, pines, cryptomeria. Some bushes w. new leaves. Some plums (?) in blossom. 5/10 overcast, warm. Apparently warmer & veg. growth more advanced in growth than Kinkazan. Back to Tokyo.

2 - 4 March 1966. In Tokyo. Correspondence, accts., shopping. Then train to

Aomori, arriving morning Mar. 5. Then to Wakinosawa and Kurodani Mar. 6, Sunday. Snow gone with warm rains except for rare patches. Visited Kaizaki & saw monkey group, apparently intact. Windy & near freezing. (SA2. camera; 35 mm Kodakchrome)

7 March 1966. Observed & photoed monkeys in Kaizaki canyon. One shrub, Hamamelis (spell?), with dozens yellow flowers some bushes. Some low coriaceous shrubs (*Azumnasays* *Sikimia*) on ridge apparently evergreen, w. red berries. On ridge W. of Kaizaki canyon, leafless branches of Quercus mongolica bark eaten ^{tooth marks} ~~monkeys~~, as if by mammal smaller than monkeys. Under melted snow patches, runways as of voles or shrews. Also found monkeys near feeding station & fed them (searched coast to N. in about last saw no monkeys on 10 March.) apples, soy beans, wheat, & peanuts on 8, 9, 10 March. To Wakinosawa

11 March 1966 To meet Dale Arvey of NSF, Tokyo, with photographer (M. Naito) and USIS writer. Clear day with view of Hakoda & Suahi mts.; perhaps fairest day of year, tho windy on sea.

12 March 1966. To Wakinosawa, & by train to Aomori. Then on

13 Mar. to Sendai, where stayed 14 - 21. Looked for housing.

Visited Drs. Kato, Ishii, ^{Yoshioka} ~~Yoshioka~~ in biology dept.

Met grad student Ke Ogasawara, tit population studies, who will help me at Kinkazan. ^{Dry} ~~Dry~~ until 16, then rain early morning.

Journal

10 March 1966

Coast N. Kusadomari, Shimokita, Japan

↑ out
of order

In 1½ hr boat trip along coast N. of Kusadomari, saw harlequin ducks, mergansers, gulls, hites, cormorants, auks or puffins, and a white-tailed sea eagle. ~~2~~ To Kinkazan Is.

22 March

12 Mo 1966. With Ko Ogawara & Rolf Kford to Kinkazan. Windy & overcast. Rained steadily all afternoon; no field work.

23 March 1966. Alt's station, calm. Examined vegetation for signs

of spring - nothing notable yet in natural veg., but plums in blossom near shrine, & daffodils, & an evergreen shrub w. rosy red flowers.

Hiked around from 0700 to 1630. First to summit & N. along ridge.

Down to shrine, back to summit. Via E. side trail to lighthouse, where got weather info. Then to forest shack. Saw 10± snowbays about noon, but lost them. Deer still have antlers. Birds seen: *Garrulus glandarius*, *Corvus leucilantii* + *corone*, *Chalcophaps indica* (2) and *P. pelagicus*, *Dryobates hyemalis* (in pines), *Motacilla grandis*, *Sitta europaea* (Ko only), *Agathodes caudatus*, *Parus varius*, *P. major*, & *P. ater*, *Chloris sinica* (flocks 30± on ground), *Passer montanus*, *Milvus migrans* Larus, *Asp. Pandion*?

24 March 1966. Windy & some ice but clear. To shrine, thence E,

to ridge & N. on crest but did not find monkey troop. Back S. past summit, thence to shrine & took 1350 boat for Ichinomaki. Saw 2 ads. above shrine (solitary ♂ or ♀?). Saw & photoed bark eaten, prob. by monkey. There are few filled droppings on trails (fox? badger?) occasionally, tho no canine tracks noted. No sign rabbits or squirrels. Saw 1 lizard, & small mole-like mounds & passages seal places.

26 March 1966. To Tokyo via train. Conferred with Dr. Arvey, NSF.

Journal

28-30 March 1966

Tokyo; To Sendai, Japan

Worked on accto., notes, photos, NSF 5-yr. report writing. Returned to Sendai via train in evening. / In Tokyo met Prof. Harlett and Dr. Imaizumi.

31 March 1966. Conferred w. Ko Ogasawara. Telephoned Terada on Kinkazan - he arrived Sendai Apr. 1 eve, & we conferred morning of 2 April. He had seen at least 30 monkeys in Kinkazan gps.

4 April 1966. Monday. Train to Ishinomaki, boat to Kinkazan, w. M. Terada, student from Osaka. Arrived noon. Walked canyons to SE of summit, then N. ridge, but found no troop. Rain evening.

5 April 1966. Some frozen ground; cold wind but few clouds. We searched separately. I saw 1 and he 5 on slopes SW of summit, but we found no large troop. / ~~Deer~~ ^{Deer} - some groups 3-4 incl. yearlings. Once 2 bucks together. One gp. 6 deer in grassland. Antlers still present, hard; start of rut? Found carcan ^{buck} ~~bucks~~ about 200 m. NE of Forest Cabin. Births must not be in spring (as in U.S.). / Phenol. - the low common red-stemmed shrub has leaves to 2 cm. in sheltered places at 100 m. level; no leaves atop N. ridge. Parpenus nr. Forest Cabin has elongated terminal buds, to 1 cm. - no life apparent in buds beech, ^{chestnut} ~~Belhava~~, walnut. Alnus at hotel level, buds fresh & plump but no leaves. Pruus tree - buds elongated about 50% beyond bud scale, nr Forest Cabin. ^{on} ~~the~~ flats nr. streams in shade ^{*Veratrum japonicum*} on E. slopes, shrub collage to 20 cm. (many). And new 2 ^{*Erythronium japonicum*} leaves of "katahori" (6 pointed pink star flower) frequent. So still only the barest beginnings of spring foliage. A Rosa (?) shrub = *Rosa multiflora* with comp. leaves 2-3 cm.; + another shrub with fine ^{long} spines also started nr Forest Cabin.


14 April 1966. With S. Azuma, to Kinkazan, arriving 1130.

Sci. names
Dr. Yoshioka,
Hokkaido Univ.

Journal

15
14 April 1965

Kinkazan Is., Miyagi-ken, Japan

Stratus clouds. Phenology - Mr. Shrine, cherries in full bloom, + 5% new leaves on old trees. Hotel road (100m.), Viburnum erosum buds just bursting. On main ridge, 3-400m., Quercus mongolica buds turgid but not elongated (main big oak on island; few Q. serrata). Betula, Fagus, buds not elongated, nor Castanea, Juglans. Carpinus Tschon. buds pale + to 2 cm long; slow but early start. Alnus tree (hiruta?) w. strobiles + catkins (dry) along shrine - hotel road had leaves 2-3 cm. long, + an Alnus teretica shrub had 3 cm. long leaves too. Leucothoe nr. Forest Cabin, leaves to 3 cm. (but buds < 1 cm. on N. ridge top). Aralia elata - new buds tips, 3 cm (eaten by men). One of shrubs on E. ridge nr ^{400m} ~~400m~~ with bark eaten = Fraxinus sieboldiana (valuable buds); no bursting yet. Azuma thinks other ^{much} ~~much~~ eaten shrub there is a euphorb. Common on E. slope, judged by old dry leaves, as Acer diabolicum, Acer palmatum, and Kalopanax racinifolius (Araliaceae; young leaves edible said Dr. Yoshioha). He said Acer mono rare on Kinkazan. / ^{Deer} ~~Deer~~ - Terada found a shed antler; I saw lunch w. only one 40cm. antler, + found ^a shed antler Apr. 16. I saw a 6" spike w. 2 ♀♀ and a yearling. Also a spike + older lunch together; a crow stood on back of smaller, which showed no alarm when crow flew off. / M. Terada had been looking for monkeys daily + thought them somewhat tamer toward him. On basin obs. one day, he now thinks 2 groups of 34⁺, as he saw one gp. above hotel + later a gp. to W. of ridge 1 km. farther S. Also he says a gp. of 3 ♂♂, + 2 solitary males, sometimes in shrine - hotel area. He had seen ^{an} the infant again too. / Of the 4 in cage at main shrine, big ♂ right ear ; others ♀♀(?).

M. fuscata

Journal

16 April 1966 Sunday

Kinkasan Is., Miyagi-Ken, Japan

With Azuma & Terada hiked over area W. of S. Ridge, then to top ridge & back N. Saw a few members one group monkeys. Rain to 11 a.m. Late afternoon I to summit & N. ridge but saw none. I think 2 large bands monkeys improbable. / Also see M. fuscata notes for 15 April. /

17 April 1966.

Collected Fagus twig + bud sample at 400m, N. ridge. / 1/10 cumulus today.

I spent 5 hrs. searching for monkey troop, without success. //

The greenish iridescent Geotrupes (auratus or oshimanus) dung beetles now common on trails, tho I saw none rolling dung. Back to Sendai.

21 April 1966. Took train Sendai to Amori, & stayed overnight.

22 April 1966. Boat to Wakurawawa; windy from SW. Hiked to Kuro-donari and Kaizaki canyon. Met S. Azuma there; he had not seen monkeys today. Examined vegetation + phenology. Fagus buds bursting!

23 April 1966. Examined plants; no monkeys came to Kaizaki. Windy. Saw one woodcock in Kaizaki canyon. Set 5 traps for rats in forest.

24 April 1966. Min. 6°C in Kaizaki shade. Wind stopped, but occas. sprinkle. No monkeys to Kaizaki by 0730. Traps took 2 Apodemus speciosus. Conferred w. Azuma - he got no precip. records for Nov. thru Feb. Hiked to Wakurawawa. Bus to Amori, train to Sendai.

25

26 April 1966. Train + boat to Kinkasan. Foggy, windy. Terada said saw 2 infants of monkeys. Hiked 4 hrs. but saw none.

27 April 1966. With Terada found & watched monkey group near main ridge.

Clearing & wind dying morning. At least 2 inds., possibly 3. Fagus not yet w. burst buds - behind time at Kaizaki! Oak, Acer palmatum, Carpinus, Fraxinus, in state similar to Kaizaki. Aralia more adv. at Kinkasan. See M. fuscata notes for phenology details. /

Crows - saw 2 carrying 12" sticks in bill, as if starting nest. Deer - groups 4-6 does w. ^{young} fawns + yearlings

Journal

27 April 1966

JAPAN
Kinkazan, Miyagi-Ken

common. At shrine one ♂ w. 10 cm new velvety antlers w. forks. But away from there, saw 2 w. both antlers hard & 2-3 points. Saw a blue backed (tanager?) in beech forest. Saw ^{isopods} bugs out now; saw 2 snakes (colubrids?) about 4' long, one frog (3 cm C-R; ^{Nymphid?} ~~larva~~), other insects besides Geotrupes. / Lower part of Pillar canyon, about 50 M., apparent A. palmatum w. buds to 2 cm but closed. About 100 M., same, apparently, w. 4 cm. leaf blades, & some Carpinus w. well-formed leaves to 7 cm on small tree (other sp. of C.?). Perhaps canyon warm, as narrow & rather rocky, a refuge for monkeys in winter. / 28 April, Prof. Toshioka helped identify plants, at Sendai.

29 April 1966. To Tokyo to catch up on accounts, correspondence.

4 May 1966. Train & taxi to Seiwa-mura, Chiba-Ken, where met Kazama and inspected progress. 3 infants born ^{March} ~~March~~, of about 25 ♀♀. Veget. devel. ahead of Kinkazan. Copied weather data at Mushiwa.

6 May 1966. Again to Seiwa, with Prof. Nishida of Chiba Univ., who was an energetic field man, specialist in ferns, well acquainted with Takago flora. Returned to Tokyo.

¹²
11 May 1966. Train back to Sendai, Miyagi-Ken.

¹³
12 May 1966. To Kinkazan, alone. Checked phenology. Saw but 2 single monkeys. No fog or rain. Found freshly shed antlers, but saw deer with forked horns, another with 10 cm. spike atop basal haired R. Chamael. - Celastrus, acer, Magrolia, Yellows, Carpinus, & most Fagus now leaved out, the same Carpinus & Fagus still in leaf bud. Flower tassels on Juglans. Conspicuous clumps pink Rhododendron in flower.

¹⁴
13 May 1966. Hiked around, & saw but 2 single ♂ monkeys.

Journal

¹⁴
13 May 1966

Kinkazan Is., Miyagi-ken, Japan.

Collected plant spec. Heard cuckoo, grouse (?) hooting; saw flycatcher - more variety small birds than before. Frog voices common in stream (fresh water crabs here too). ^{Unsuccessful} ~~Unsuccessful~~ in trapping moles (2 traps only). Back to Sendai.

Itin.: 0630 Cabin Pass, → Summit → Mt. Shira 0820 → Summit 0850 → Heaven Pillar 0945 → Cabin Pass 1130 → Dock 1330. / *Cirio stratus*; 10 kt. ^{NE} wind.

17 May 1966

To Kinkazan

With Ko Ogasawara and Dr. Yoshioka, to Kinkazan. Dr. Yoshioka helped identify plants. They returned to Sendai. Ralf + I stayed overnight. (S. of Cabin Pass)

Found seal monkeys area of S. ridge, espec. W. side near top.

¹⁸
18 May 1966 Left Kinkazan 1400; returned to Sendai. / Deer - I saw one gp. on S. ridge main peak with 3 faked horns (hard), 1 10 cm spike, 3 does (at least 1 seq.), 1 yearling = 8. Doe nearest me gave "ee" call, opening mouth, & took high slow steps → me, repeating whistly call. Another place saw faked horn + doe. Mr. Hoshizone saw buck in velvet, w. 10 cm. antlers. The fat one sitting on hotel lawn also in velvet, w. faked antlers to 20 cm. So well fed over in velvet; wild w. had old antlers. Deer food - heavily browsed in *Rhododendron kaempferi*, *V. coccineum*. *Leucathoe* + *Ganthophylon* not browsed appearance. Stunted *Fagus*, some w. leaves, some still bud, to 30 cm. tall on N. ridge in *Leucathoe*. At one site in carpenter woods (10 m trees) saw 8 crabs, some on ground, fairly tame (appr. to 10 m.) bear?

23 May 1966. Train Sendai to Tokyo. Office work.

25 May 1966. Train to Kisarazu, taxi to Seino, where met Kayama.

We visited troop 5 at Takagayama, where 10 info. born to date. Then to Kamogawa.

26 May train to Tokyo, Nagoya, Inuyama. And on

27 May conferred with M. Kawai at JMC. Then to Nagoya

Journal

27 May 1966

and Kyoto, where conferred w. Suzuki, Sugiyama, Miyoshi, Itani at Univ. Then on train to Keshu. Furuya joined me.

28 May 1966. Arrived Miyazaki 1345. Bus to Kojima, arriving 1645. Short visit to island with K. Yoshida. In troop of 59, one birth so far. Birth season a little early this yr. at said localities, apparently. Some on Koshima w. crown molting.

29 May 1966. With ^{Furuya} ~~Furuya~~ by taxi to Toimisaki, but did not find monkeys. Rain and wind early morning. Returned to Koshima and again to island. The concrete lab building on island complete now. / S.A. reported ^{first} birth Kaizaki gto. May 20 (4 Tara).

30 May 1966. Short visit to island. Then bus, train back toward Tokyo, where arrived 31 May. Evening, on to Sendai.

24-5 May Half overnight at Kinkazan. Heard monkeys *S. ridgeae* but saw none.

To. Kinkazan, Miyagi Pref.

7 June 1966. After days overcast, fog, drizzle, clearing. Leaves full. *Magolia* and *Cornus* in conspicuous flower. *Phododendron haempferi* blossoms mostly gone, while *P. japonica* in bloom. I saw 10 monkeys, but not whole troop (or few mins.), including infant. Eating leaves *Gymnocladia* and *Berberis*.

8 June 1966. Another fine day, but found no monkeys by noon. Returned to Sendai.

10 June 1966. To Tokyo to confer with NSF, Azuma, and JMA (meteorology). Returned to Sendai. Most days overcast now, but cool.

Journal

7-8 June 1966

Kinkazan Is.

Dozens of black (+ occas. yellow) swallowtail butterflies, at Rhodod. leucopsiferi shrubs (falling flowers). Saw swallows and black ^(no more yellow) swifts over higher parts island. Also 2 ospreys in same area (S. + E. of Colin Pass), both days. Deer - at hotel on lawn, eating garbage, velvet (turning yellowish) antlers to 3 prongs + 50 cm. Some higher on slopes with shorter new antlers. But I saw 2 with freshly shed antler stubs on ridge (250-350 m.), and 2 spikes w. old hard antlers about 10 cm. No fawns. On ridge, some seem to have matted sides, the shoulder hair old. Two bushes together. One bush, w. stumps, w. 5 unantlered on ridge.

To Tokyo and Inuyama, where stayed at Furokaku about 10 days. Departed for Honolulu from Tokyo about June ²⁵ 26, & to San Francisco June 29, 1966. In Inuyama, mostly gathering weather, birth, and vegetational information, preparing plant specimens and associated data, getting Kayama + Azuma to assemble labeled set of photo prints.

N.S.F. project in Japan continued to Dec. 31. Co Data sent to me in Calif.

END

20751

Kotford, C. B.

Catalogue

1965

#3000-02

Uganda

Koford

Specimen Catalog

1965

Kigami Tea Estate, km. E. km. S. Ft. Portal, Toro, Uganda, E. Africa

3000

♂

Cercopithecus ^{ascanius} nictitans

Shot by Wm. Pridham on ground eating crops. Broken calvarium.

29 Aug.

24 Aug.

3001

3000

13 km. E. 5 km. S. Ft. Portal, Toro, Uganda, E. Africa. 4700 ft.

Red-br. nose.

♂ t. 27x13. Mouse

340-191-31-19, 19 gms.

Daylight, 5' above ground in roadside bushes, in Kibale Forest.

Toro Game Preserve,

1 Sept.

Semitiki Plains, 18 mi. N. 6 mi. E. Ft. Portal, Toro, Uganda.

3002

♂ t. 5 mm. Barbet.

stuffed w. paper.

[Pridham's turnoff]

5 Sept.

Kibale Forest, 7 mi. E. 3 mi. S. Ft. Portal, Toro, Uganda

(KAK measured)

KAK No. 1

♂ t. 17x9. Dark mouse.

195-97-27-16, 41 gms.

(Kristi A. Koford)

CMK No. 1

Forest floor in disturbed second growth, near edge; dark, damp.

Meas. by Carla K.

14 Sept.

♂ t. 16x10. Large sand mouse.

343-183-41-27, 100 gm.

3037

- then Peru, July - Sept. 1968

X Donated to Zool. Dept., Makerere (Dr. Delany)

Koford, C.B

Species Accounts

Primate Studies

1965 - 1966

Japan

India

Uganda

Koford
1965

NSF Project.

In Japan 21 June - 1 Aug. 1965

30 Jan. - 24⁵ June 1966.

Macaca fusata

(N. Honshu)

23 June 1965

Kusodamari, Shimokita, Japan.

about 2 p.m. walked up wooded valley of K., npt N. of Kusodamari town, with S. Azuma + C. Nagel. Beans in small plate near bottom. Newly cut trail. about 1/2 mile up came to 6 x 10 shade in shade large *Thuopsis* or *Cryptomeria* trees, + there met Masao Otake of JMC. Some monkeys feeding from flat box of wheat, + others nearby. Some ~~ad~~ *Medialantaria* crows of a few conspicuously molted. Saw 8 at once, including 2 ad. ♂, + 2 ♀♀ w. infants. One latter within 20' of us at times, + ♂ charged near me (6-8') when I tried to eat apple. Trees in canyon: *Thuopsis*, *Cornus*, *Acer*, *Fagus*, *Prunus*, Chestnut, others. Low chestnut in flower. Big tree to 60' or +. One 3-yr ♀ feeding, lean, with patch lost hair on side; only one in poor condition. / Azuma said now:

	ad.	4-5	3	2	1	1 ad.		
now: ♂	2	2	0	1	2	3	10	23 total.
♀		6	3	0	2	2	13	

Saw 10 + 3 inf. at once within 20 yd. space + within 20 yds. observers. Azuma said local people started feed last Oct. He came May 20 + found fairly tame. Since June 13 provisioned regularly this site. ^{Dom.} One ad. back 2/3 molted. Only now started to accept wheat. (Food nearly gone, + Az. worried that might start to eat crops.) Az. says they strip *Cryptomeria* bark; that eat ^{conifer} ~~oak~~ winter. / We walked upstream + h. slope into shaded forest with little undergrowth to top of ridge, where Az. thought might provision. He had previously seen + fed monkeys there, about a mile from + 500' above lower feeding site. Prob. trail could be built. / We suggested building creep feeder for feeding, installation weather instruments, + ^{Ridge} enlarging small house for sleeping.



Macaca fuscata

1 July 1965.

Ko
Shodoshima, Kyushu, Japan

K. Yoshida says monkeys on Shodoshima breed early, & also two groups transplanted from there to N. & E.; indicates some genetic basis? - or carryover of early cycles, which might get later in time.

Koshima - 18 mature ♀♀; 3 born so far. First birth to highest ranked ♀.

(it & mother w. rules)
No ylings, as all inf. died last yr. (dog? killed); only one body found.

Cooler this summer than usual. / Once a monkey, ad. ♂, to mainland
it returned
opposite; 4 yrs. later back to island. Largest ♂ about 12 kg. (weigh

by feeding on scale). Stunted - some ad ♂♂ have pelvis permanently
slanted down posteriorly; 2 yr. olds only about 6 lbs. / Fed by scattering

grain (& other) on ground, where monkeys eat sand as well. Given a barley
& pea mixture today; much crunching & not greatly relished. / On island

about 1:30 p.m., & soon 17 monkeys near us, very tame & slow.

Long legged & slow moving compared to C.S. rhemes. Hair darker &
shorter than at Shimadzu. But stage molt similar - many with
medial anterior crown molted. One said to be 6 yrs. old I est. at 10 to

12 lbs. Breed season similar to Takasaki, perhaps slightly later,
tho T. animals have better nutrition. Some molted forearm &
scapular area too. / I saw one eat yellow sail 10' above sea level;

Y. said at Takasaki eat sail in 2 places & lick certain rocks. /
2 July 1965. Takasakiyama

At Takasaki about 5:20 p.m. Dirty run down appearance; a few monkeys
nearly to R.R. tracks on road. Yoshida said now 3 bands of about 92 -

180 - 720. Last gp. formed 1963. Last good census 62 (marked w.
paint). Inf. now larger than at Koshima. Some ads. w. molting
of smallest gp

crown, as at K. about 50 feeding; Y. said these peripheral members; park
closed for day.

Shodoshima, of Okayama, Japan

3 July 1965. See notes in Journal re Shodoshima monkeys.

Macaca fuscata

3 July 1965.

Shadoshima

Mr. Takao said fed about 30 liters wheat a day, + 40 kg. sweet potatoes. (I est. 140 lbs. for 250, which is a lot). If visitors feed much, give no food; none on Sundays. Takao said no regular weather sta. on island. | Takao said some ♀ had 2 deformed babies, lacking hand or foot; another one lacked little finger. Teratoma. | 0 of 4 born last yr, + 2 survive, said Takao. Y. says counts sent to JARC regularly. Small gps. wait at distance while large feed, T. said. | At ft. of "rope way" of Kankake, we saw another group, but no regular program feeding or study. Station mgr. fed for people. He thought about 150, + about 15 inf. When food put out, I saw about 80, incl. 8 inf. Large + in good condition. Apparently birth season similar to better fed gps. | Monkeys had been in "park" up slope, but ran out of money, so unmanaged make now by fenceless station. No molt apparent in most; a few ♀♀ still molting. Occas. 2-3 yr. ♂ has pink sex skin above scrot. collar. Occas. ♀ has "necklace" red sex skin, w. gaps, from clavicle to clavicle. Neither seen on C. S. monkeys. | I saw 2-3 ♀♀ w/o inf. | Another unfed gp. said to be ^{on} NE peninsula of island.

4 July 1965.

Gogyusan, nr. Takahashi

Slope about 200 yds. above RR track, 500' above level river. Flat area for monkeys, pool, 2-3 rock walls w. narrow terraces for monkey feeding, + shaded benches for people. Clean + orderly, with interested energetic keepers. About 100 said to be in gp., + another unfed group in forest upslope. A third gp. had been removed, almost entirely, to Shibusu m. Tokays. Monkeys large, pelage good, + many too tame + bothersome. Molt in progress; more irig. than C. S. rhesus. Some on ant. medial crown only. ♂♂ molted crown, forearms, midl. back; ♂♂ 2 similar. But one, said to be sub.

Macaca fuscata

4 July 1965

Gagyo-san, nr. Takahashi, ^{Honshu} ^{slightly}5, w. upper parts 9/10 molted. Molt behind time of *Abodori*, + births, ^{later}.Births: 1964, 10 Apr. to 25 May. 1965, 20 April started + 2 still pregnant, keeper said. (Furuya has been observing here.) 30 born so far this yr.Feeding soy beans + wheat. About 75 x 100 yds. slope cut short; another 100-200 yds. upslope more grass up, + large forested area above. A clear 10 x 20' pool for monkey play + drinking. Some isolated large walnuts (light green terminal leaves) and ^{red} pines. / Studied here about 6 years. Elev. perhaps 500' or +. / K.Y. said that when part of a group caught, rest did not join another gp. (but in *P. entellus* in India, when ad. ♂ removed, rest of gp. joined another. / Y. said this year 3 born lacking finger or toe.Journal

(pg. Osaka City un.)

7 July 1965. Student fr. Osaka, Mr. Koyama, will accompany me to Takagoyama + Kinkoyan next week. Yashiba said gps. of about 140 and 80 there, plus 3 unprovisioned troops. Toy Tokuda has observed there. Birth season not studied. / Kawai says ♀♀ with inf. molt later than others. But no one has particularly noted or studied molt in *M. fuscata*. / Furuya apparently had not noticed birth season *M. erica* on islet (Nagaya Bay) had become progressively earlier, 1961 to 1965; lumped ^{total} fig. indicated year round births w. 2 peaks. Yashiba said *M. cyclops* seasonal births on second islet, Papio year around on third.

8 July 1965. Shopping for eqpt. Nagaya; train to Tokyo afternoon.

9 July 1965. Visited NSF office; still no NSF funds or word of them. Shopping + office work. also July 10, 11. Azuma + Koyama arr. evell.

12 July 1965. NSF office for mail. Departed 11:30 Train for Chiba City + Kazusaminato with Naoki KōYAMA, Osaka grad. student.

Macaca fuscata

14 July 1965

Kusodomari, Shimokita, Japan

1520, shock in K. canyon, 9 monkeys plus 3 inf. / One ad. ♀ still w/o inf. (1 mm. white spot R cheek; scratch R nipple; mod. age); she had yel. ♀ (crown molted) which seemed to try to suck, + she pushed it away; saw (Somet. fed along. adult ♂) sev'l x. ♀ barely started ant. crown molt. / Apparently oldest ad. ♀, w. inf., slight molt crown + new patch lumber (+ 2 small punctures), thin fur chest, R ear En notch. / A yrl. w. back 1/2 molted, held and handled inf. / a ♂ 3-4, back 8/10 molted, with crest on crown. / Adult ♂, back molt 9/10. / ♀ w. ♂ inf., molted crown, forearms, + sacral. / ♀ w. inf., crown molt just started. / ♀ 3(?) yr., back 8/10 molted; ss. above isch. call. bright pink. / One ♀ had inf. + yel. with her. / ♀ w. yrl. ♀ inf., crown molt just started. / Yrl. ♀ w. crown molted. / Inf. climbed on back of 3(?) yr. old + rode it as if willingly. / About 12 seen at once, incl. only 1 ad. ♂ and 5 ad. ♀♀. ♀♀ left a few at a time, walking up(?) slope to N. of stream. At 4:40, rather dark in shade of Thuyopsis in canyon bottom; ♂ remaining incl. ♀ w. inf. + 2(?) yr. old, her crown + forearms molted; incl. 3 yr. + younger ones feeding in boxes, the peanuts prob. exhausted. I left + returned 5:15; all gone, but heard one call on slope to N. / Trees: some Cryptomeria, prob. planted. Hypocastanum w. 8" fruits on stalks ^{to} E; sev'l trees thus. Elderberry bushes w. 2-3 mm. red berries, canyon bottom. Juglans (?), foot-long hanging stinging seeds^(?); comp. leaf.

15 July 1965.
Rain after midnight; no monkeys at feeding area by 7 a.m. Left; returned 4:15; none, but came about 5:10. By 5:30 at least 10, incl. 3 ad. ♀♀. / See Journal 15 July.

16 July 1965. Heard night, + 7 a.m. (see Journal). Left; returned 1510 + watched group. All 4 yfs. played together in grass. Identified

Macaca fusca

16 July 1965

16, incl. only: 1 ad. ♂, 5 ad. ♀, ♂ 3, ♀ 3, ♀ 2, 3 juv., 4 inf. (2 ♂ 2 ♀). | ad. ♂ carries tail ^{white} curled forward against back. / saw at least 12 at once, not incl. infants. // about 9:30 a.m. ^{woman} said saw one

17 July 1965. Put food 7 a.m., but none took it by 11:40.

Azuma said saw on Kurodomari side ridge in morning. | Kurodo. side; about 3 p.m. crested ♂ 3-4 yr. + others near rope by buildings at mouth canyon. | Food untouched at feeding area; | blew police whistle + put more; monkeys came in 1/4 hr. Windy. Departed.

19 July 1965. About noon set up wooden creep feeder at provisioning site. No monkeys came until about 5 p.m., when semi(?) solitary male came + fed watchfully. Anterior scrotum red only distal half, + perin. less red than ♂ w. band. Still Azuma that 8-10 yrs. old. He said formerly with the band as no. 2 male. This one climbed 20' up Thyopsis-juglans tree + stayed there all night.

20 July 1965. About 7 a.m. ♂ descended + fed a list, then left. No other came by 8 a.m. when I left. | In mid afternoon returned + found nearly all food gone, including the grain + soybeans in wooden food boxes. No other came by dark. Molt slightly behind stage of other mail; many long hairs lateral thighs. Male watchful, nervous. | Azuma's count:

	Age	♂	♀
ad.	20+	1 (5+)	6
	10±	1	
	4	1	0
	3	0	3

2

1

0

looks like 1 yr.

incl.

(1 sex?)

1

2

1

1 in f.

2

3

(1 sex?)

= 21 total.

Macaca fuscata

24 Feb. 1966

Kinkazan, Miyagi, Japan

Cold (m. 0°C.); few clouds; mod. wind. Left shrine area 12:45, walked S to forest dept. hut. Many Juglans nuts on ground, hulls of Castanea, hulls of Fagus. Alnus has attached reddish catkins & strobiles. W ascended main ridge after shirting SW side sev'l small ones, returned & down to forest hut. Saw no monkeys, tho possibly heard 500 m. SE summit once. Conifers green; moss on ground green, & rare clump short bamboo. Rhododendron (?) bush had 4 mm. tiny green leaves. A short (1-2') bush w. red twigs common on slopes & evidently much cropped by the deer. / Forest patrolman here, worth said saw marks, only once - 1 or few near his hut - but he seldom to E. side ridge.

25 Feb. 1966. Warmer; ci-stratus; no wind. About 10 am walked up canyon behind (E. of) main shrine → ridge & at 10:45 saw 2 monkeys on ground about 100 yds. W. of fence (on ridge). Appar. ad. ♀ + 4 yr. ♀. They 50 yds. apart. Moved slowly. Picked in leaves & pushed leaves about as if searching for food. Heard monkey screams 100 yds. NE of them & soon saw 2 more on ground, 75 yds. apart. Walked slowly; poked in leaves ^{for} corduliter w. ¹ pairs. Then saw 2 at fence. One stood on hind legs to look at us. One atop 5' fence (ripe). A crow on fence flew at a walking monkey to 2'; turned quickly away. Azuma said he glimpsed an "infant," & saw ♂ w. head limp heavily (Ralf also saw it.) I saw apparent ♂ est. 4 yrs., ♀ est. 3 yrs. Two crows flew at one; one landed close by monkey as if to get food uncovered, & monkey hurried away. Three monkeys in one gp.; Azuma thought all ♂ or ♂ - one larger than others. One of smaller mounted the other; repeated - and seen sev'l times more in 10 min; perhaps not always betw. same 2. We went to summit mtn., then down ridge to S. of monkeys. I then saw

Macaca fuscata

25 February 1966

Kinkazan, Miyagi-Ken, Japan.

5 at once, incl. 2 grooming pairs & one ad. ♀ (red faced; appeared pregnant). Walked toward the set at about 100 yds. distance they started off, a few at a time, walking slowly. Three more came up to ridge top from W., one being ad. ♂, ~~off~~ one a ♀ w. a juv., one juv. The juvs. estim. 2 and 3 yrs. old. So at least 8 here, not incl. a limping ad. ♂. They went to canyon bottom & then too next appeared uphill atop main ridge nr. fence, walking N.; one in tree 20' up; one sat atop boulder. We departed to ~~shrine~~ ^{shrine} area. Azuma collected some droppings. Also piece of shrub ^{with} appar. bark eaten, appar. by monkeys - Azuma said it was Isobachne obovatum (Euphorbiaceae); about 2 cm. diameter; trunk 10' tall. In all about 10 mountings seen. Once heard "kush!" call, apparently alarm at us. Azuma thought 2 pairs, ^{1 ad.} ~~1 ad.~~ ♂♂, 1 ♀ in all, but I think not so many - maybe 10.

28 February 1966. Visited gp. 5 area at ^{Chiba-Ken, Japan} Tahagoyama (Mr. Miura).

Most enclosed in 2 hectare fence last Oct. 1, leaving about 15 outside (incl. 1 ad. ♀), said Mr. Miura. About 79 inside - just before matring there enclosed, so good "experiment" perhaps. (Koyama saw first copulation in main A troop about Oct. 17; he arrived Oct. 8). In cage, 3 ad. ♂♂. Broadleaved trees dead. Most tame & many take food from man's hand. Conditions animals good. Naito photo. We went to far side (-kulitsu) of mtn. & walked to hilltop where main part (83 est. by N. K.) troop A fed. Kawamura said, ^A split to 3 groups (in 1965?), one part 37± to E, another in new area to S. The 37 gp. said to come to feeding area when large troop leaves. (Info probably from monkey feeding laborers there.) One

Macaca fuscata

28 February 1966

Takugoyama, Chiba-Ken, Japan

ad. ♀ bleeding as if from vagina. No molt apparent. Two in troop said (by N. Kayama) to have formerly been No. 1. Fed lentils (or soy?) beans. Many acorns on ground - apparently fed to monkeys earlier but not relished. Two males with papilloma on lip (on Cayo Santiago only 2 ♀?).

NK said men said first birth about April 21 last year (K. does not entirely trust Mr. M's counts as ^{there} ~~there~~ (K counted) now more young in gp. 5. than were said to be born. On basis copulation obs. Oct. 17 by NK, ^{we} expect first births about April 1. In gp. A feeding area, marked trees under study by K. are:

Castanopsis cuspidata, Viburnum coccineum, Q. serrata, Prunus sargentii, & Machilus thunbergii

7 March 1966. About ¹⁶⁰⁰ 1530 I arrived feeding area in Kaizalri canyon. Some grain available & a few monkey tracks on snow patch nearby. Put more food. (During winter local people tried to put food, but often put in Kusodamari canyon rather than at feeding area in Kaizalri, said S.A.). Soon monkey group came, including 5 yearlings and both adult males - apparently no loss since last July! (Azuma departed December & returned sev'l days ago but had not seen monkeys in Kaizalri, tho in Kusodamari canyon Mar. 5 or 6.) Mutsu (male #2) often threatened me to 6'. Two ^{yearlings} (born '65) sat by an ad. ♀ at 2 sites. Grooming common. Ate soy beans avidly. Azuma said saw eating Acer mono buds, over 100 in 1/2 hr., in Kaizalri canyon. Tree 2A (A. mono) showed no apparent growth buds. Az. thought 1A (Juglans) had shed bud scales. 10A (Hammamelis) had 2 flowers (Mar. 8); ^{some} ~~some~~ nearly had dozens flowers - first sign of spring in shrubs! Short bamboos, leaves mostly green.

Macaca fuscata

7 March 1966

Kaizaki canyon, Shimokita-gun, Japan

Windy & about 0°C midday. To Kaizaki feeder 1000; no monkeys.

ascended crest ridge to W. & saw seal on rocks, just to lee of top, for about 1 hr. (distant photos). To monkeys & found them tame in trees. Some ate one bird after another (Corvus?). (Photos here, Kodachrome & b&w.³⁵ ¹²⁰). About 2:30 p.m. gp. descended toward canyon ~~can~~ bottom & went to feeding area. Mutsu slapped my leg occasionally as he charged. When I looked down into reflex finder he usually ceased threats → me. Threw food in trap cage (Azuma said that none would enter last fall) and one entered within 1 minute; soon 3 inside (3'x5'x12' cage trap). On ridge branches Quercus w. bark eaten, but teeth seem too small for ^{monkeys} w/s. Azuma. Warmer. No precip. Some sunshines.

8 March 1966. Arrived feeding area 1030; group already present.

Much feeding on vine in trees W. of food shed. 10B, 1 flower starting (Azuma could not find trees nos. 4, 5, & 9!). Apparently all 21 ^(Hamamatsu) present; Azuma explained recognition marks & age estimates. (We departed 3 p.m.)

9 March 1966 Windy. Sp. at feeder 10 a.m. when I put out food. None there when I returned at 3 p.m.

10 March 1966. Calm morning early. 0915, none at feeder but food put 1500 yesterday gone. We hired boat & Azuma & I went N. up coast about 0940 to 1030, searching shores & slopes for monkeys, but found none. To yellow cliff area, past where s.d. said Azuma gp. reported seeing gp. Stream & falls areas ^{icy} ~~icy~~. Back at feeder 1430. Group came, but not Mutsu. Mutsu ate wheat long, grain by grain. At 2 sites 3-4 yr. ♀ groomed yearling (sib?). Departed I departed 1515. Wind & rain evening.

11 March 1966. Trace snow night; windy. Azuma to fdr. 0930.

Macaca fuscata

11 March 1966

Kaizaki, Shimokita-gun, Japan

Dale Arvey & others to feeder 1300. Sp. present, photos by Naito. Mutsu present. ♀ Itako gr. ^{Masui} Mutsu. Some ate tips and green sedges on bank, incl. Mutsu, Sugi. Hiba has 20 mm papilloma at scar posterior R knee U; raw spot above pap. One 4-5 yr ♀ lies edge roof & takes apples from our hands. / After Azuma, composition =: Osore ♂ ad. 20+ yrs., Mutsu ♂ 9+ yrs.; ♀♀ in order rank - Buwa 15+, Itako 18+, Momie 8+, Hiba 7+, Nara 15+ (no inf yearlings), Keri 6+ yrs. (smallest ad.). Others: Masui ♂ 5, Sasa & Tara ♀♀ 4(±1), Udo ♀ 3, Ton & Fugu ♂♂ 2 yrs., Nezu & ^{apparent orphan.} Sugi ♀♀ 2 yrs., 3 ♂♂ 2 ♀♀ yearlings. Last born later. 1 and 11 June 1965 (D. Az.). SA says weighed all last fall!

23 March 1966.

Kinkazan Is., Miyagi Pref., Japan

Pterod. - plums in full blossom near shrine. Stand of 30-40' Carpinus? 50 yds. S. of forest shock, buds ^{seem} ~~are~~ slightly elongated & pale, succulent. Juglans, Castanea nearby, no change, nor in Fagus, Carpinus on ridge, or Zelkova (scaler bark). Buds to about 3 mm long on low red-twigged common salal-like shrub (much browsed by deer). Moss & bases some grass green, & tiny leaves Rhododendron. Alnus, no hotel, catkins elongated & loose - tassel. One tree on trail E. of shrine had tight new catkins (sp.?). (Minor rail 70). / at 3 sites a laterally extending shrub 10± ft. tall had bark eaten or by monkeys on twigs 1-2 cm. diam.; photos & collected. No other bark eating seen. Collected twigs & buds from Fagus & ^{Carpinus T. (?)} ~~are~~ on ridge ^{E.} ~~to~~ E. of shrine, for possible nutrit. analysis. / 0930, I saw 2 atop ridge just N. of trail E. of shrine, on ground in dry grass w. ^{Alnus} ~~Alnus~~ and Fagus trees; to site but found no

Macaca fuscata

Kinkazan Isl., Miyagi Pref., Japan

23 March 1966.

sign. At 1130, nearing crest E. of ^{shrine, (highest draw, S. of trail)} I saw 1 ad. in tree (near where saw in Feb.). Then upon reaching ridge alarmed a group of 10[±] in beech trees just E. of crest; these ran to ground and off over ridge to N. One sat on ridge looking toward us (100 yds.). Ko followed them and again saw gp., but they alarmed and ran N. again, ^{well} below & to E. of ^{N-S} ridge. We searched but did not find again. / Walked S. of summit, then E. to coast & S. to lighthouse; later back same way to forest dept. shed. Saw none. Is there another group, or only the one of 10-20? What happened to 60-70 reported by Iyama in 1963? / No precip.

24 March 1966. Walked forest house to ^{shrine & E. to ridge, then N.} ridge & N., searching slopes for monkeys, but saw none. Back to S. & partly down ridge E. of summit; there I saw apparent monkey droppings, perhaps 1 mo. old, atop boulders of granite outcrop. / At 0830, soon after leaving shrine, I saw on ridge to N. of pass 2 adult ♂♂, apparently solitaires which come to shrine area, in rock & grass. / If gp is only 17, maybe only 4-5 ad. ♀♀, hardly enough to justify much effort here. Monkeys not easy to see, however, as gray color similar to boulders, & tree bark, & usually on ground rather than in trees. Spring not so advanced as I thought it would be - perhaps plant phenology behind Shinobuta.

4 April 1966. M. Terada had been here about Mar. 26 to Apr. 1 and had seen troop 30 or + in canyon SE of summit, & had found troop seal timer (see his notes). Today he accompanied me, & he will spend most of April on Kinkazan. / About noon he saw 3 ads. about 1/2 way between Shrine & Hotel, when walking trail; we thought these "solitary" males. / We walked over pass to E. of Forest Cabin and down to foot valley SE of summit, but

Macaca fuscata

4 April 1965

In open Fogus, found skull about M. fuscata; old. saw none. To summit + N. long ridge to 1720 pm; saw none.

5 April 1965. Searched separately + saw a few monkeys SW of summit. Cold, windy; some ice morning. / Terada showed me leaf-

Food.

less vine-covered brush (in canyon E. of ridge E. of Frost Cabin), where he said 2 monkeys ate (droppings near). about 8'; spreading. / Low in canyon just S. of big ridge E. of summit (canyon of E. Cabin), many dry droppings in an overhang of granite 8-10' high, about 200' up slope - a resting or sunning spot? \rightarrow Rock also droppings on or near many granite boulders in this canyon. / I walked to summit + en route saw at least one on boulder in Miscanthus ^{grass} nv. alies on ridge W. of summit, about 300 m. level - I thought perhaps the "solitaries" seen by Terada yesterday. (There are bark-eater shrubs on this slope, & by some boulders many monkey droppings, so perhaps frequented.) / I went far up N. ridge, searching, listening, but saw none; turned back 5. 1000; again at summit 1050. Down ridge to E. 300±m., sev'l. ^{10'} low shrubs, gnarled, spreading, with branches barked by teeth - at knots, & on small branches down to 1 cm. or less diam. in tops - probably monkeys. (Valvate buds, stubby). Perhaps stunted by monkeys. Most of same species, while others untouched. / Atop mossy boulder under Fogus-Carpenter, 50 yds. N. of Heaven Tower, 30± droppings - sitting place? (Terada saw gp. pass near here once.) / Returned to Frost Cabin 1310; departed 1430, & again to canyon below Heaven Tower, to summit, & back down in area SW of summit. (Terada said saw about 5, apparently including 2 juvs., this canyon about 1630-1700. Monkeys frightened, to next canyon N., & when he to ridge they :


Food

Macaca fusata

5 April 1966

Kinkazan, Miyagi-ken, Japan

were on far ridge, to N.

6 April 1966. Clear, calm; no ice. With Terada walked W. from Forest Cabin at 0830 climbed stile at crest - alarm call 50 m. to W. + ad. ♂ ran. We stopped, watched, & soon saw at least 7, incl. 2 old ♀♀, one with tiny dark infant clutched to breast (alive; turned head up.). ^{Prob.} ~~Deer~~ born since April 1. An imm. (³ Apr.?) nr. other ad. ♀, 10 m. up a tree trunk (no foliage). Watched at about 200 m., the monkeys aware of us. / On slope 3 imm. (yearlings?) gently wrestled & romped. One, sitting, leaned back against stump as if to scratch. Occas. one to 2 m. up a trunk. No obs. nr. them. / One ♂ subad. - dark chest; narrow bare pink perineum. / Occas. heard short "glurp," sev'l times - prob. not alarm. 0910, about 3 yrl. together ran across slope in dry leaves, going W. / An ^{2-3 yr} imm. walked down a slanting fallen log on ground; stopped, crouched, looked → us 200 m. away. (Apparent crest ). 0920, adult [♂] walked same route, along top of fallen log - common pathway. Deer in same area; open Fagus - Carpinus slope. 0938, farther E., 4 imm. (3 or all yearlings) one on fallen log. One reached up & pulled down branch tips & nibbled at it. A big ad. ♂ (leader?) walked across slope above them; one imm. shyed away from him (at a start from him); a second walked within 1 m. of ♂. The group ran 300 m. E. of pass. An imm. in tree descended slowly, met another on ground, & the 2 ran off together. 1005, ♂ subad. & imm. into creek bottom, going N., ♂ walking on fallen log top. 1008, slight alarm at observers at 150 m.; they back to S. up slope - ♂, yrl., 2 yr., ad. ♀ (?), all in succession walk

Macaca fuscata

6 April 1966

Kinkazan, Miyagi-ken, Japan

ing top of ^{another} fallen log. (Another ad ♂ was 200 m. N. of them). 1040, ad. ♂ + gray ♀ m. bottom (400 yds E. of pass), while 3 ad were 200 m. upslope to S. of them. (Some mout. prob. due alarm.) ♂ walked slowly upslope, ♀ 2 m. behind, another ♂ 100 m. behind these. 1115, I walked SE over sidehill ridge + saw ad. ♀ (6 yr.) and an ad. ♂. 1130, ♀ (6 yr.) ascended leafless tree alone, slowly, on a ridge. Little feeding. Shortly I saw an ad ♂ in the same area. I cautiously approached - when I reached ridge, ♂ was on left ridge to SW, + 200 m. down canyon an adult ♀ on a slanting trunk gave alarm call every 5 ± secs. (Taya, about A above mid-C). Red faced; no grl. with, but 2 immis. ran S. from area. / Composition estimated: 3 ad. ♂ (1 a subad.), 3 ad. ♀ (^{big brown} ~~gray~~, gray w. inf., younger one - probably 1 or 2 more ad.), 3 immis. (2-3 yrs.; one w. slight crest); 3 yearlings. / 1210, I left Terada to follow + study gps.

15 April 1966. Returned w. S. Azuma. Terada thinks 2 groups of 30+ (see Journal). We went to Forest Cabin, E. over ridge, then N. past Heaven Pillar (1420) to summit, up N. ridge to Mountain Shrine, back to main temple 1605. Stayed at shrine for night. / A young man, Shuntarou Murayama, visiting island to start study of effects deer on forest, but seemed to know nothing of usual observation + game mgt. methods - looking for damage by deer to trees, apparently.

16 April 1966. Rain to 11 a.m. We hiked area to W. of S. ridge, where Terada recently saw large group, but we found none. Saw 2 woodcutters + asses. Filled Decayed(?)

Journal

Info.

Macaca fuscata

16 April 1966.

Kinkazan, Miyagi-ken, Japan

tree that area. T. said he saw monkeys S. of Sancho Pass (above line) on S.E. slopes once. / About 1330 from S. Ridge about 500 m. S. of E Cabin Trail, I saw one large dark apparent ♂ in Fagus open forest, standing N. Shortly I saw one in next draw to N. Azuma said he saw 4, but going N. We went to E. Cabin trail area but saw no more. I to area Heaven Pillar, Summit, & N. Ridge but saw no more. Prob. frightened the gp.

17 April 1966. I left shrine 0640 & went via Summit to Heaven Pillar & down trail to E. Shack, then up (W. on) E. Cabin trail, but saw none. Later along S. Ridge & back N. on W. side - saw none. Back at Shrine at 1310. Terada & Azuma had gone out short time but had found no monkeys. / Droppings - in an angle of granite blocks, flat dirt floor, protected, facing S. across a draw about 1/2 km. S. of Cabin Pass, 100+, as if monkeys often rested there. One small but old pile in another pocket, completely overhanging about 50 cm. up, same slope. Evidently gp. uses Fagus - Abies slopes ²⁵⁰⁻³⁰⁰ 300-400 meters up on WSW slopes. Kaizaki

22 April 1966 Kaizaki Canyon, Shimabara-gun, Aomori-ken, Japan.

Arrived about 1 p.m. Azuma said 21 warm and much plant growth that day - Fagus crenata buds bursting, folia increasing in height. Deciduous forest had general leafless appearance, the ground granish with folia to 20 cm. high. (Pteridium?) ^{Ferns} to 10 cm. in clusters. Aralia and Kalopanax ^{C (lat. buds 1 cm) (terminal)} buds to 6 cm. Acer mono buds turgid & elongated (green valvate tips) about 100% at foot canyon nr. stream. Bruner grayana most leaved shrub in canyon; leaves to 6 cm. Fagus crenata - some inactive w. buds closed, buds 2 cm.; others w. leaves to 3 cm. long, especially on high branches, on S. slopes. Nr.

Ph. eva!

Macaca fuscata

22 April 1966

Karzaki, Shinokito, Aomori, Japan

Phenol.

stream below 50 m. ^{asl} alt.; Sambucus leaves to 6 cm. Katsura common and in flower in open below 50 m (^{assumed} alt. of feeder). Canyon runs SW., & main slope investigated faces SE, so gets much direct sun - perhaps this is laciniata? reason phenology seems no later than at Kirikoyan. A large Alnus, not common (one ♂ of tree 2 A, & below 6 A) abundant new flowers (?). Stachyurus praecox, 2 meter shrub, now w. no leaves but pendulous yellow flowers ♂. Viburnum furcatum - shrub w. well-formed 4 cm lvs. curled in C (Azuma says first to turn purple in fall). Lindera shrub, leaves to 3 cm, 50% beyond bud scales; common understory shrub on SE slopes. Fraxinus lanuginosa - 6' shrub, bark eaten by monkeys, no leaves present (^{bark} Frax. also eaten on Kirikoyan!). Tilia tree on SE slope, red buds turgid + 10% ^{to 100%} elongated, some burst. Prunus tree (sargentii) may be same sp. as Kirikoyan (no leaves yet). Viburnum Wrightii shrub - lvs. to 2 cm.; understory on SE slope. Mallotus - shrub in cut over area; red buds, closed (^{new} also on Kirikoyan). Morus - streamside n. mouth canyon; buds burst + elong. 50%, to 8 mm. long (also occurs on Kirikoyan). Carpinus cordata - buds elongated to 3 cm. but not burst yet. Azuma says monkeys seen eating sev'l spp. of new foliage, but not new tree buds! Common spp. w. Kirikoyan: F. coronata, P. mongolica, P. sargentii (if same sp.), Mallotus, Morus, Acer palmatum, Juglans, Aralia, Cab. parox. + genera Fraxinus, Carpinus, Viburnum, others. Atop W. ridge too, Fagus buds bursting. On W. side ridge mostly Quercus mongolica, only pure stand; buds turgid, about 12 mm, not burst. (abortion?) Mrs. Azuma said Hiba[♀], formerly apparently pregnant, now w. abdomen not distended. S.A. says 2 ♀♀ in addition appear to be pregnant.

Macaca fusca

23 April 1966

Kaizaki, Shimokita, Aomori, Japan

Exund marked trees. 2A, acer mono. Buds turgid, pale tips, elong. $10\% \pm$.1A, Juglans, new leaves in bud form to 4 cm. long. 1B, Juglans, new lvs. in bud form to 3 cm. 3A, a. palm., buds elong. 100% , to 6 mm.4A buds turgid, sticky, light green, 20% elong.5A, $1000 \pm$ leaves to 6 cm (w/o) 8 cm w. / petioles. 6A, buds elongated to 3 cm but not burst.7A - buds turgid, not elongated; 12 mm long. 7B Buds turgid only. 8A, buds bursting, $100 \pm$ on upper branch to 5 cm long; lower branches to 3 cm long.8B On 2 upper limbs $100 \pm$ buds burst, 4 cm long; lower limbs, buds elong. to 3 cm. 9A - not found.10A, leaves closed, to 2 cm.; flowers gone. 10B, a few flowers too. / No monkeys came to feeder area all day, & noneseen on slopes or ridge to W. Apparent recent feeding on bark of Dendropanax on ridge to W. Windy; stratus clouds.Kinkazan, Miyagi-Ken

26 April 1966. Arrived noon. Tenaka here since 21. I walked shrine to Pond about 50 m. asl.

Hotel. Near shrine, cherries in full blossom & 50% leaves. Along road, Carpinus (many trees - to 2 cm., not burst).cordata buds elong. & many burst, about 3 cm. new growth; Alnus trees &shrubs, leaves to 4 cm. Bellis - buds elongated 300% but still only 1 cm.long or less; essentially, turgid but not burst. Aralia staller - leaves open & to 10 cm. long. Viburnum coccineum - 50% leaves, 1 cm. long. Somebig Rosa multiflora, lvs. 3 cm long now. As general view, Alnus $1/4$ leaved, Bellis 0. Castanea - few buds, but some burst, & leaves to 2 cm. (but many old dead buds; diseased tree). / Near ForestCalvin (170 m. ?): Tagged Juglans, 20" dbh, lower parts new petiole & leaf growth to 6 cm long; at top tree, buds elong. but fruits not separated yet.W. side
50-100 m.
asl

Macaca fuscata

26 April 1966

Kinkazan, Miyagi-Ken, Japan

Other large tree (^{16"}~~20"~~ dbh), new lvs. to 8 cm long all over. Castanea - few buds; some new, green, 1 cm long, opening. Some other trees no apparent activity (diseased; poor indicator). Carpinus - on some low branches buds open & lvs. to 3 cm, but only elongated & 2 cm on most branches (this ^{is the} general condition on higher parts island). Tree 3A, 6" dbh, lvs. 3 cm in crown. Trees have start of greenish foliated look. / I walked E. up Cabin Trail. Leucothoe lvs. about 8 cm, almost full size (in leaves all over island, incl. N. ridge). Fagus #4, 15 m, 40" dbh, buds still hard, not elongated, no leaves protruding, scales tight - this is general condition throughout island - Fagus ^{buds} not burst, tho many burst at Kaizaki! In same area Carpinus 50" dbh buds pale green & elong. but not open, while another 100' distant had lower part 1000± buds burst into leaves 3 cm. (Variation in phenology among vid trees & among branches of same tree). In gen'l, Carpinus buds elongated & pale green but not burst into lvs. Cap Cabin pass, same; Carpinus just starting to open, Fagus closed. Just E. of pass, Juglans buds swollen & elongated, with about 5% separated into 3 cm. parts (lower levels, mostly w. finger-like separation). At higher level, start Fagus, canyon wider & more open, Acer palmatum (green twigs) 10 m. 12" dbh buds turgid only, as at Kaizaki (also on a large one near ^{iron}~~road~~ rail on path E. of Shrine about 300 m.). Another Acer (dialolicum?) about 200 m 20" dbh 10 m lvs. 4 cm & open. / Again on W. side above Hotel, 100^{m.} m, tips of Abies branches w. 2 cm. bunch of new pale green leaf. Rhodod. brachyphyli - buds & lvs each about 2 cm long; slow growth. Prunus (sargentii) tree - buds extended to 4 cm in closed leaf bunch; no open leaves. / At Shrine met Terada, who had walked around N. half island E-W. and at 1630 saw about 12

Fagus -
Kaizaki
ahead!

W. side
100 m.

Macaca fuscata

26 April 1966

Kinkazan, Miyagi-ken, Japan


monkeys, w. inf. (black one + red one); esp. B he calls it + still thinks there are 2 gps. (See M. Terada notes) tho I do not. Apparently a gp. of 2-3 separate in shrine area, + a gp 2 ad. + imm. often lags behind gp. B., according to Terada. / The old ♀ "Monko" at shrine died recently. Still 4 in cage, 3 ♀♀ + 1 ♂ ad.; none seems pregnant.

27 April 1966. 6 a.m., I saw big ♂ atop cage of monkey at shrine; he ran up adjacent Thuyopsis when I to 10 meters distance. 9/10 alto-cumulus; warmish. I walked up to shrine canyon to Hachigane + out N ridge (to place where MT saw gp. yesterday), then back toward Hachigane, and about 0820 to SE of Mt. Shrine saw 2 adults, one appar. a big ♂ + other smaller + younger (subad. ♂?). Then came to boulder on a sidehill ridge, + soon walked down slope under Fagus (slight alarm at me, 100 m. distant + close). I waited 5 min.; saw no more; thought only 2 there. Then near Hachigane I met Terada, who had seen ♂ + incl. ♀ w. inf. He still had in sight ad. ♂ lying atop mossy ^{3'} boulder, resting or dozing. Later he pulled a 60 cm stem toward + apparently ate at tip. Finally it walked N. along sidehill (prob. subad. ♂, which follows gp.; long red face). Then nearer summit, on E. side saw 2 lge. imm. w. ad. ♀ 80 m behind, walking S. along sidehill. 0950, E. of summit about 40 m. level, 2 ad. ♀♀, both w. infant. Larger one reddish, active; smaller, black, held close. There on dry leaf floor slope, watched at 100 m. 1010, SE of summit about same level, saw sev. ♀ + gr. yearling while 2 yr. lags alongside, on mossy rock. 30' from there, ♀ (w. red inf., which walked to 2' away) gr. ad. ♀ w. yearling! So saw at least 7 (1 inf.) not including ♂♂. 1025, 50 yds. NW of there, single ad. (red face - ♂?) pawing in leaves. Red One inf. pulled + mouthed bent over lily (A). Inf. walked over belly of

Macaca fusca

27 April 1966

Kinkazan, Miyagi-Ken, Japan.

supine yrl. being groomed (prob. cousin rather than sib.). This gp. soon had 2 ♀, 2 yrl.; 1 inf. - so mother red inf. may have yearling. Isps. then: ♀ w yrl. + 2 yrl.; ♀ w. 2-3 yr. old imm. (= 5); 2 ♀, 2 yrlings, + red inf. (= 5), + single ad.; + 50' from there a ♀ yrl. These are well separated gps., + no ♂♂ near them. At least 6 ad. ♀, 2 inf., + yrl., 2 2-3 yr. imm. / ♀ w. black inf. walked 100' from others + sat. Inf. walked to 1 ft. from her - she ate small green leaves from 40 cm shrub, pulling (branches toward her. she gray, brownish sides, red-faced, possible light area over l. eye, crown darker (molt?). Hair thin or from scrape, middorsal poster. thoracic (Terada says white-nosed). Inf. picked up objects + put to mouth. She gave occas. "questioning location call," 1 sec., . There only sounds heard from monkeys in 4 hrs! Inf. prob born about April 20 or before, judged by activity (as one Apr. 1-9, 1 Apr. 10-19). 1110, she yrl. inf. which lay on back w. legs spread. She sat. 8 yrs., not large or old. / Big ♂ sat by logs 20' from another ♀; scratched his side w hindfoot, slowly walked SE. Calm; sultry, bright; alto calm. + serious. / A deer stood within 3 meters grooming monkeys; no apparent reaction. / By 1135 gp. had moved slowly off. ^{Two} came upslope to 50 m. from me. One fed, pulling lush tips toward (40 cm. ^{plant} ~~tree~~); 1 cm green leaves. Isps. very loose it seems. When all but close ♂ out of sight, I cautiously descended Pillar trail on top of E. Ridge. Prob. slightly alarmed animals; they walked up slope + crossed ridge, sent pausing on 10' boulder on way, + walked downslope to S. About 12, incl. at least 6 1-4 yrs. + no obvious ♂♂. I waited. About 100 m. behind others came 2 imm. (about 2 yrs.) in fast walk, on a log, to crest + down to S. (As at least 8 1-4 yrs.) No more came in 5 min. Terada had gone down trail to S. a top

Macaca fuscata

27 April 1966

Kinkazan, Miyagi-ken, Japan

ridge. He said he saw 3 infants, the ♀♀ walking in succession, & that they had continued into E. Cabin canyon - a long row; ^(prob.) some alarm? So evidently at least: 7 ad. ♀♀, 3 inf., 4 ♂ yrl., ² ♂ immo (2-4), 2 ad. ♂♂; probably more - about 20 in gp. / Tanaka left 30 April. I talked w. him in Tokyo on May 3, & got his notes & maps. He described only one gp.

4 May 1966

Takago-yama, Chiba-ken

With Kayama, at feeding area A, about 250 m. Molt - 2 ad. ♂♂, new hair central anter. crown, 4x6 cm. area. also in some ♀♀; & occas. one w. new hair forearms. So molt started. Food - provisioned year round, but (under pressure) Kayama thinks about 20% natural in winter, 50% in autumn. In autumn food abundant & monkeys travel more, shake trees more (aggressive? or ^{poor} visibility?).

Pelage - short & scraggly compared to Shimohita. Ears prominent here. Some have faint striated "look to fur" - transverse bands of slightly lighter color, ^{roughly} 1 cm. apart. / Births so far in group A.

♀ Isa - 10+ yrs. - Inf. ♀ b. 4/14 No yrl.

♀ Yori - 6+ ♀ 4/20 No yrl.

♀ Mija - 6+ ♂ 4/29 No yrl. - but 2 yr old? /

Feeding area A - about 2 mi. NNW of summit Takago-yama. Summit (Lake no.) might temper weather there! 315 m asl. Michima weather sta. 4 km. E. of area A. Seiwa 4.5 km.

Takago-yama 35°15' N, 139°55' E., 8 km. from sea (to SW). ^{Plant info on sep. unlined sheets.}

6 May 1966. Again visited Takago with ^{Asst.} Prof. N. Nishide, lecturer of Chiba Univ.; identified plants & food items.

13 May 1966.

Kinkazan Is., Miyagi-ken

I walked about 5 hours in monkey area but saw only two. 1326, 200 m. E. of Cabin Pass, 1 ♂ on ground on hillside, alone. Picked

Macaca fuscata

13 May 1966.

Kinkazan, Miyagi-Ken, Japan

at ground. Then at 1530, ♂ 5 yrs. old?, on ground in Mesicanthus on S. side of W. ridge, on crest. Climbed Castanea (?) + sat 10' up. Alone.

14 May 1966. Walked 0630 - 1230 in monkey zone, & saw 2.

0720, N side of summit about ^{400 M} level, ♂ ad. in ^(usual one of which) 3 M shrub, ^{leaves eating} eating new green leaf tufts (about 1/5 sec.). Straight stiff & dq. III (≈ II?), IV + V missing perhaps. Watched at 100 M. 0727 climbed higher, soon lost. Broken new Fagus leaves on ground; ate Fagus? Alone. Then at 1140, W. Cabin Canyon, 200 m. ^(W. of) below pass, ad. ♂ on tree branch, resting. Whined a few times, but no alarm call. Alone. Watched at 100 M. Slight crest (or start molt?). Red face; tester up. Climbed higher, & away. | Now more in trees than before? To eat new leaves? I did not see groups.

17 May 1966

Kinkazan

Walked up ^{W.} Cabin Trail. 1230, 100 m. ^{W.} E. of pass, saw large adult, imm. est. 3 yrs., ^{and} ♂ est. 4 yrs., on ground on sidehill. Then slightly alarmed and walked ^{uphill} 5. up slope toward hilltop, where Ralf found them a little later. About 1430 I to hilltop (S. ridge, S. of Cabin Pass) and we heard much squealing, as if imm. being threatened or bitten, on W. slope in area thick tree cover. We walked S. along ridge, heard other calls. About 1600 I descended cautiously down to W., toward repeated ~ short call, & saw ad. ^{within} running in rhododendron clump 50 m. from me. Difficult to see much area at once because of foliage, tho many open sites under trees. About 1655 met R., who had gone down slope to S. of me. He had seen ♀ W. infant, and about 4 apparent imm. at once. 1700, heard single repeated call ~, about high C, every 10± sec., & briefly saw adult. This

Macaca fuscata

17 May 1966

Japan
Kinkazan Is., Miyagi-Ken,

in brush, oak, carpenter, rhododendron area. At one flat spot near road I found 50± droppings, as if favorite spot. Again I heard calls to S. + upslope, went slowly toward, saw none. To top ridge to N. of telephone line crossing, + there heard calls on slope to E., as if animals had crossed. Rolf thought that in all he had seen at least 10 inds. this afternoon. Calls heard at 1770, when we started back N. on ridgetop. Rhododendrons now in full bloom.

18 May 1966. Clear, light breeze. About 0630 left Cabin, + to pass.

Rolf went S. along ridge, I to N. I to summit 0745, then out N.

Ridge, turned back 0900, summit 0950, + back to via Heaven Pillar +

Cabin Pass to Cabin. Rolf had gone out + back S. ridge twice, + heard +

saw none. I saw none either. (We did not even ^{lower} Shohyohu canyon.)

About 1130 from Cabin out telephone line to S. for 45 min.; but detected

none. / Apparent new monkey feeding on bark Callicarpa near stream above Cabin; Kodach. photo.

25 May 1966.

Serwa-mura, Kimitso-gun, Chiba

Conferred w. Naohi Kayama. / For gp. S. (in enclosure) he gave composition

	ad ♂	Mat. ♀♀ (5½ and +)	Imm +	-3	-2	-1	-Inf.
Oct. '65 as:	6	26	+	+	6	11	18.

but apparently members: ad. ♂ and 3 imm. ♂♂. So 79 total. (K. says Mr.

Mura says 2 inf. died, so perhaps 20 born in 1965). K. says in

May 1965 only 65 (±10) in enclosure. Apparently fence rather

imperfect barrier. / Mr. Mura gave birth dates this yr. as: April

9, 14, 24, 28, May 10 (outside cage), 11, 13, 18, 19, 24. I saw one w.

drying placenta, prob. born 25. (Possibly he missed one more.) The


animals enclosed early Oct. '65, but most soon escaped. Put

in aged, most stayed. Fence cyclone wire about 8', then bends

Macaca fuscata

Takagoyama
Seki Toyo
Chiba-ken

25 May 1966

with steel single wires, electrified .
area 1800 Tsuba (3.3 m² ea.) said Miura, on slope with
tall bamboo (green leaves) and many dead or nr. dead trees
(pines included). One ♀ w. inf. outside fence. Steel ♀ & w.
molted central crown, & some scapular area too. ♂1
has advanced molt, including lumbar area and thighs,
but two other ad. ♂♂ slightly more advanced. (Still not
clear whether early molt means good or poor condition.)
Births and molt are ahead of A troop (2 whs.?) I
think. Animals look poorer - some lean, scraggly.
Partly due to fights in enclosure, I think. I saw ♂1
attack a ♀ w. inf., chase, catch, & bite her as if punishing.
Apparently enclosing gp. at start of mating season had
no significant effect on mating season, but of course
fence imperfect and outsiders got in. At any rate,
estrus not delayed.

27 May 1966.

Inuyama, Aichi-ken

M. Kawai has compilation reported birth seasons many
localities since 1958, and has made some graphs
comparing. But apparently has done nothing toward
correlating differences w. ecological factors. He thinks
birth season somewhat early this year. I In the
usually early gpts. on Shodoshima, births ^{in A} on Mar. 3,
Apr. 26, May 6. While in B on Mar. 1, Apr. 6, May 2.
Furuya Furuya reported that at Gogjusan births in
1965 started April 29. In 1966, May 8, with 8 born
(expected 25-30) by May 27. At Kyoto univ.,
visited Suzuki, who spent a week at Jigokudani
early May to census groups and count births.
He said in group A, provisioned, w. about 35 mem-
bers and 12 ad. ♀♀, 3 births in April. But in
troop B, not provisioned, 80-90 members including

Mocaca fuscata27 May 1966

Kyoto, Japan

about 21 ♀♀, 18 born in April. Wild troop earlier than provisioned! (I think Lindburg found wild troop nr. Dehra Dun earlier than a forest dept. grounds gp. in 1966.) Does more abundant food = later mating? Another man, recently returned from Takahashi, reported 13 inf. found there to May 26. / Kawai, incidentally, now recording molt, and agrees that it is earlier when ~~mole~~ birth season is early, as at Shodoshima (vs. Kosheima).

28 May 1966. By boat to Kosheima, Miyazaki-ken,

with Yashiba and Furuya. High, densely green vegetation of shrubs and trees, shore lined w. low sandstone cliffs. One fisherman, wife, & dog live on the island. Minimum water barrier about 200 meters on mainland side. Said to be many raccoons on island. Animals poorly fed up to 2 years ago and probably stunted. Until then, seldom had normal sex behavior (♀) until 6 yrs. old, but now start at 3½. Usually first birth at 5 yrs. (Yashiba). Fertility also low, as only 7 born to 20 ad. ♀♀ last year. Y. also said ♂♂ 1, 2, 3 did little actual mating, but 1 & 2 especially after sat sat by ♀ and masturbated to ejaculation. Solitary ♂♂ (7) did most of the mating. Composition: total 59. 22 ad. ♂♂ (3 yrs. at+), 20 ad. ♀♀ (1 & 2 yrs., 1-3, rest 6 at+), 1 inf. (born May 12 to low ranking ♀ which had no inf. last yr. or 2), and 16 imm. (+ 5 yrs. 5 yearlings, but no 2-yr olds. - a typhoon in Sept. of 1964 kept everyone from island for many days, and all adults survived but no infants survived. / Sent ♀♀ now in advanced

Macaca fasciata28 May 1966.Koshima, Miyazaki-Ken

pregnancy (but 2 or more of these have clear molt crown).

Yoshida said in winter use 6-7 kg. food per animal per month (sweet potatoes?). Summer less, as abundant natural food. May, eat berries, fruits, new leaves.

Vegetation - trees & shrubs about 1/2 evergreens, Y. says. About 12 species dominant. He has plant list and observations on phenology. He also says birth season a little early. Also that Takasheyama season more compact as numbers increase (as at Cays 5.).

Bonnet macaques - 1 gp. + 2/3 another brought from India to JMC. First pair in enclosure, other in dome cage. In wild most info. Aug to Feb. (births), but a peak rather than distinct season; the peak varying with locality. They plan to put bonnets on an island. Occasionally one ~~crosses~~^{crosses} to mainland. About 6 yrs. ago one or did, then about 3 yrs. later returned just before mating season, participated in mating, & departed again. 1 of 7 born last year, 5 survive.

29 May 1966 Rain & wind night to nearly noon. 1050, left for Toimisaki with Furuya. Many Cycas in canyon m. monkey feeding area, near ocean. Feeding at foot of a mod. steep wooded canyon. Saw no monkeys, but fresh droppings. The keeper, Koshio Yorieichi, there about 10 yrs. and says May 21 earliest birth he remembers. This year first May 24, and 4 born to date. Says usually all born by (mid?) July - short season? He said about 250 monkeys, now tending to split troop. Gp. at feed area last eve, & usually comes down when sees him. He put wheat many spots on ground by 1300, but no monkeys yet. | Vegetation thick & green, with high

Macaca fuscata

29 May 1966

Toimisaki, Miyazaki-ken

proportion evergreen. Many ferns in open, trees high, and many light green new leaves ends branches evergreen trees. Dock (Rumex) weeds common in open; Furuya said monkeys eat all parts at Sagyusan. He thought height & density veg. similar to Sagyusan, but more evergreens here. He thought he recognized "haze" and some other species. Weather record available for lighthouse, atop exposed ridge. Back to Kashima. When fed sweet potatoes, many take and dip in puddles or edge sea before eating, or eat off brown layer & then swim vigorously in water from time to time, sometimes also brushing food with hands. Partly for salt flavor? A mother with infant immediately walked directly & alone 50 m. to rock at edge water, & washed potato in tidal wash at base of rock (photod). See'd ate one potato while holding another in feet. / Malt stage earlier than at Takogo 5, apparently. ^{Would} Does understanding influence eval. factors on malt give clue to infl. on mating season? Malt also in ♂♂ & immis., so more easily obs. Rank - Y. pointed out ad. ♂, son of lowest rank ♀, who was next to lowest of 6 ad. ♂♂ in troop. First birth to a low ranking ♀.

30 May 1966. On Kashima 0730-0900. Much play

Macaca fuscata30 May 1966

Koshino, Miyazaki-ken

among yearlings - Y. says typical of ^{early} morning. 2-3 lit, wrestled, climbed after each other in bushes, dangled, dropped. ♂ 2 had clear crown molt (kadochrome). 1 2 youngish ad. ♀♀ pregnant. Y. said 7 yrs. old and pregnant for first time. (Retarded devel.?). He also said vaginal bleeding not seen outside mating season - significant in view high no. non-pregnant ♀♀. I saw ♂ 1 mount imm. (3 yr?) and then lie on side, + imm. groomed him. Y. said ♂ 1 teeth much worn, so biting by him is little punishment. Y. seems to be best informed of all the primate people in Japan; good man.

7 June 1966.

Kinkazan, Miyagi-ken, Japan

Now veget. in full leaf. Warm, humid. Below area of Forest Cabin, a few soft loose droppings on trail, & I found 3 in first 400 m. to E. of cabin. I to Cabin Pass about 12:30 and on to S. on ridgetop, reaching hilltop above Sansho Pass 1350. Along S. ridge trail I found 3 spots fresh sloppy droppings, w. Isotrupes working in them. Heard & saw no monkeys, so back N. to Cabin Pass (1420) and beyond. 1450, heard ^{where} ~~squeak~~ call and saw 2 adults descending from N. ridge, just S. of summit, down canyon to SW, as if disturbed by people above. I stopped & waited, 150 yds. from monkeys. From time to time 1 or 2 more descended, and I saw at least 9. These included:

Macaca fuscata

8 June 1966

Kinkazan, Miyagi-Ken

only 3 ad. ♀♀ and 1 inf., so not the whole large group, and no yearlings. I judged ages & sexes: 1 inf., 1-2 yr., 2-4 yr. ♂ (butt not reddened), 1 ad ♂ (mating crown), 1 ad ♂ (w. bloody L elbow, left forefoot up in running - one of the 4 yr ♂♂ was with him, & these were last in order); + 3 ♀♀ (only 1 w. infant). (Allowing for 6 more imm. + 3 ♀♀, still = only 18 total in a gp.). The ♀ w. inf. followed by 2 yr old. / Malt. A 4 yr. ♂, small testes, had anterior 3 cm. crown matted. ^{an} (Red face, small testes.) Ad. ♂, malt continued to rape in medial hand. (25x telescope). / The animals walked across slope to ridge. ♀ w. inf. ascended 3 m. Symplocos tree ^(photos) and ate leaves in successive handful grabs. (I collected some for analysis). While below her on ground, in open Merianthus area, an ad. ♂ ate from a Berberis bush (1515). 1530, nr. same tree on ridge a ♂ (4 yr? - barely pink butt) pulled down branches Berberis bush (mod. spiny) and ate from, sev'l xx. I went to the tree, and across the valley to NW, atop W. ridge, ¹⁵⁵⁰ I saw 1 reaching up, standing on hind legs, & eating from Berberis bush. (Later visited site, but did not relocate gp.)

8 June 1966. 0630 at Cabin Pass. Walked down to E., N. cross country to trail to summit, up to area Heaven Pillar and summit. Heard none, & saw no droppings - in more open areas. To W. at this season? (May? Much Ganthoxylon here, but ^{no} Berberis or Symplocos - too damp & shady?). 0840, left Summit and walked out S. Ridge (to above Sansho Pass), where some droppings (same as yesterday?). Heard none. Returned to area Forest Cabin.

Cercopithecus ascanius

(redtail)

Cercopithecus nictitans (ascanius?)21 August 1965⁵Kibale Forest, 7 mi. E. Ft. Portal, Uganda.

First saw in wild in trees around tea field of Wm. Pridham (Kigami Estate) in sparse-foliage trees, in area of Colobus ab.

22 August 1965. Mr. Km. 6^{post} ^{Kagera Samuill} road, saw 7 in trees with 10±

colobus abys. No interaction seen; at edge + within loose group. Three together on one low (20' up branch), one lying sprawled w. belly up, being groomed. Three lower in trees

than colobus ab. usually? ^[= 0.9] Mr. Road road camp I saw one apparently alone, about 11 a.m. // 1030, about 500 m. E. of Pridham house, 4 about 30' up 60' tree, about 50 yds. from edge tea field. / Rain 4 p.m. 6 p.m., after rain, from our house at front sta. saw 8± in thick foliage tree 200 yds. N. Leap about 15' out + 10' down to land on spreading flexible branch. Several in succession leaped to about same branch. / Wm. Pridham brought

spec. 3000⁵⁷

one he shot eating his "mealie." 4.0 kg. 117 t.l. - 715 tail - 145 hf, 36 ear. 57, prob. subad. Testis 25 x 20 mm.; no apparent semen in ^{said broken shell} cut t. or epid. Took 10± nematodes to 25 mm. from duod. + ileum.

23 August 1965. 0832, Km. 6 post, 2 in tree to E. of rd.

24 August 1965. 10:00, ^{14 mi. NE of Pridham House,} ~~on rd. to Pridham's jet~~, 57 subad.?, ^[= Celtis?]

alone in 70' tree, eating foliage. Leaver 4" D. 30' up. / 1230, area of Elephant Control Path, 2 adults 50' up in tree w. yellow flowers, in rain, apparently feeding (w. of road). / About 5:30 p.m. in forest just E. of Kanyawara, saw one in dark forest near band of Colobus alysienicus.

27 Aug 1965. 5:30 p.m., 5/10 overcast after rain, 7 or + in 30' trees w. mod. foliage at jet. Lelitali + Kagera Samuill road (same as once seen evening at ranger station?) / ~~5:45, 400 yds. E. of Kibale~~

redtail


Cercopithecus nictitans27 August 1965.Kibale Forest, nr. Fort Portal, Uganda

^{200 yds. S. [≈ 0.2]}
 5:55, ~~1/2 mi. W. of K-6 sign~~, one 20' ~~up~~ in 40 ft. tree w. sparse foliage.

28 August 1965. 0940, K-6, in compound lvs. tree 100 yds. ESE,

2 (ad. + juv.) pecked + ate fruits (?). In another tree w. yellow flowers (Marlebarria ?), 15' tall, 1 redtail ate apparent buds + flowers. 1120, 2 still in trees nr. K-6, feeding. / 1145, 1/4 mi. E. of Prichard house, 1 redtail handled (ate ?) yellow flowers of tree. / Mi. 5.4, at big turnout, 7 or + ^(10 \pm) (4 or 1 blue). Also nr. mi 5.3, at least 4 at 1130. Redtails moving about fast + frequently, so hard to count.

5 September 1965. About mi. 0.9, one mangabey with band of C. nictitans.

6 September 1965. About mi. 1.5, 7 p.m., 6 \pm in one Marlebarria tree eating yellow flower buds, + sometimes upper rim of large flowers, discarding rest ^{eat \rightarrow}  discard. This tree is common yellow-flowered one in which various monkeys seen lately.

13 September 1965. 1030, mi. 1.1, 1 in band w. 1 C. badius + 7 ad. C. abyssin. The redtail to the C. badius, which groomed it! Mi. 3.9, about 1300, 6 or + to W, including 2 1/2 groom juvs. All jumped singly across gap, going 15' across + falling 20 \pm '. Legs held out in fall, belly first, + not paddled. The juv. fell especially far. Landed in foliated branch. / Mi. 4.3 (area 20' stump on E. side road) a single redtail eating 15 mm. diam. spherical green fruit, smooth, in "apricot" leaved tree; apparently alone. Rain started.

C. badius
grooms
C. nict.!

14 September 1965. Saw 2 w. C. badius and Cercocebus nr. Myanga R. at mi. 5.5 about 1000. / 1230 \pm , mi. 2.1, 2 to E. Commonest + most widely distributed forest monkey here.

Cercopithecus nictitans17 September 1965Kibale Forest, Toro, Uganda

Mi. 1.66, about 1800, 12 \pm ind. at least 3 juvs. Feeding at once so hard to count; impression of more than actual nos.

18 September 1965. 0900, one near O.I. on Pritham's road. 11035, 800+ in trees to E. of mi. 1.63 - same place as yesterday eve! / Mi. 1.25, one alone ate Marlothia flowers.

19 September 1965. In tree "C" near Pritham's Rd, 141530, 3. One groomed another. All at lower level than 11 Colobus olivaceus in same tree.

20 September 1965. About 1020, mi. 1.0 to E, 2 in low trees.

21 September 1965. In forest adj. to highway across from ^{Kagera} Sawmill, saw a few near Col. olivaceus. One ad. gr. another ad. 11030, nr. mi. 1.3 W., one in same ^{Marlothia} tree w. one C. mitis; same combination in another tree. Eating same food, in part. / 1745, see notes C. mitis. 10 \pm redtails to W. at mi. 1.68, as on 2 previous eves, but one Col.

badia & 10 \pm C. mitis in group! The mitis well mixed in order.

One redtail gr. another. No species interaction seen. / 0830, K-6, 2.

26 September 1965. Two w. 4 C. mitis at mi. 1.9 W. (see mitis). One 1040 at 1.4 W. Commonest of monkeys in this area S. of Kagera Sawmill. / 1725, 1.68 W., 5 (one half grown), 4 or + Colobus olivaceus, 1 C. badia, 1 C. mitis, scattered in trees.

27 September 1965. 0810, one in same tree (Celtis?) with 6 C. badia.

29 September 1965. Morning. 1.15 W., 3 in single Marlothia tree eating flowers; 3 C. badia in area. / 1730, 3 or + w.

1. 68 W., where 6 \pm C. mitis. One redt. ate coffee fruits. They made soft grunts while feeding.

Cercopithecus ~~mitis~~ nictitans30 September 1965Kibale Forest, Toro, Ugandaabout 1130, 1.2 E., one in 20' Trema (not seen to feed).about 1700, 1.15 W., 2 eating Marlebamia. Wasa R., Toro G. Pres.4 October 1965. About 1/4 mile SW of the game lodge I saw one adult clearly, & later one in dense foliated tree near W. bank, within 50 yds. of Calobus albus. In evening I saw 2 on limb huddled together, about opposite the game lodge. Kibale Forest,10 October 1965. Near Dura River where road passes through part of uncut Kibale Forest, S. of Kijarawa, saw gp. 10[±] (1 juv.) and 4[±] including juv. 80' closed mod. dense shady forest; few dead trees.12 October 1965. about 1545, 1.27 W., 2 or + eating Celtis; pull branchlet to mouth. a Calobus bodianus within 50 yds.27 October 1965. Samuill road, 1.68 E. W., about 1600, 7, no info., went through near leafless tree in succession, not all using same route. Usual area gp. seen. 2.05 W., 1 25' up in tree. 2.05 W., one in tree, 1700.28 October 1965. In morning, Carla saw 2 to N. of Cheriso Path (N. corner Bridham tea), & 1 in mixed gp. 5 that included C. mitis & C. bodianus. Saw none in census slow drive 0.3 to 2.1 on Samuill Road, 1530-1700, saw 2 singles near 0.45 W., 20[±] ft. up. (Overcast, calm).30 October 1965. Samuill road, 1.53 W., + spread 100', 20' up. 1.54 E., single one. 1.55 W., one ate yellow Marlebamia flowers, 30-40' up, active; 100 yds. away a C. mitis sat passively, 20' up.1 November 1965. 1540, 3 singles within 100 yds. of 6 or + ~~1540, Samuill Road 1.2 W., 2 in one tree (3 red-tailed apes in Marlebamia-Celtis area on 1.3 W. within 100 yds.). Car hear mob "splash" at 100 yds. at least 3 low~~

ascanius
Cercopithecus mitis

1 November 1965

Kibale Forest, Toro, Uganda

Saw 4 singles during road census. Then at 1.9 E., 3 only 10-15' up in Trema. Tail partly looped on branch - somewhat prehensile? One into top 20' Moribania and ate.

2 November 1965. 11 am, 0.83 W., 2 juvs. in Croton (?).

One seemed to nibble new buds on ^{sides of} top branches. / 1300, about 6 walking thru branches Trema near 0.655 (curve). One mounted other ahead of it; seemed to grip selves w. hind feet; stayed on for count 16 secs. - dismounted, anterior one lay prone a few secs, then sat up & turned, & two put noses close together calmly. Then walked on. Sexual?

3 November 1965. 0815, 3± in 15' Trema at 0.9 W. In same area about 1730, 3 in 80' tree.

4 November 1965. 1035, in loose gp. (?) 3 blue, 1 redt., 1 red col., + ?, ladis + redt. passed on same branch w/o apparent reaction. / 5.5 E., at least 4 in mod. dense green veg.

5 November 1965. 1700, saw 3 singles along N. boundary forest of Pridham's tea field. Walked S. 1.35 W., 2 redt. 1.8 W., 9± with 9± blues in loose group, mixed in order as they went to N., the follow about same route. Redt. more scattered than blues in gp. (less tightly gregarious?). One ate yellow Moribania, walked to 2.15 + back. about 1830, 1.33 E., 3 in apparently leafless tree, seeming to eat tiny buds.

5 November 1965. about 1700, 1.73 E., saw 3. Near 1.75 W., 2 in big dead appearing tree, seemed to bite at bark on lichen occas.

6 November 1965. about 1700, 1.63 E., gp. of 9 seen (3 juvs., no carried info.) going through trees where little foliage, following about same path, at intervals. Two juvs. hesitated at a jumping place,

mount -
contrast w. Huddow

Ceropithecus nictitans

6 November 1965

Kibale Forest, Toro, Uganda

climbed 10' higher, & made shorter crossing there. One in ^{Trema} 10' tall.9
8 November 1965. In botanical garden, Entebbe, in 100' ft. trees, saw a small group.

11-12 November 1965.

Mabira (sp.?) Forest, 7+ mi. N. Lugazi,
20 mi. E. of Kampala, Uganda.

In forest area (30') near coffee & tea, where some Casuarina, saw a few, including band of 10 or +. The last incl. 1 carried juv., & free small juv. Chirping, bubble, audible at about 50 yds. One in tree gave toward us single short loud buzz, almost like a snap, sev'l times, as if an alarm call.

Cercopithecus aethiops2 October 1965Wasa R., Toro Game Preserve, Toro, Uganda

about noon saw one running slowly, doglike, on road and onto the bridge. Trees wide apart, & somet. over 50 yds. from trees. As car approached it stood on hindlegs as if to look at us, then ran down bank into very tall grass (& not up tree). / On previous trip to this area, saw 2 gps. along ^{S.} shore of Lake Albert, in region of the falls, in area where also saw Calothrix abyssinica. / In evening saw 3 walk down tree trunk of large spreading tree near river at edge grassland nr. the Wasa game camp, within 50 yds. of where I had seen C. abys. on previous occasion.

4 October 1965. I saw one ^{on ground} near native house at N. end Wasa bridge.

5 October 1965. About 9 a.m. I saw two (one half gr.) atop well-leaved tall tree near river about 1/2 mile S. of Toro game lodge. In eve saw one 1/2 mile downstream from Wasa bridge atop thick foliated bush 15±' tall; sometimes only head protruded.


Entebbe, Uganda.

25 October 1965. Visited F.R. Mann of Vervet (EA). Saw 5± free on road 200 yds. short of his house. See Journal, photos.

Macaca mulatta6 August 1965.Nr. Dehra Dun, U.P., India

With Don Lindburg m. Asarori dale bungalow, saw fine ♂ in tree alongside road, + others near. | We searched trails in and at edge forest for a few hours + finally saw about 5, including an adult ♂ + imm., in forest. The ♂ thrust us through aperture in foliage at 200 yds (!), tho we quietly sat on forest floor. | Full foliage on trees, yet heavy carpet of leaves on floor (fell about April). There have been monsoon rains, but no rain today. Forest is second growth, under forest dept. control, with largest tree about 12" diam. + most under 3" - so visibility poor in general. Monkeys rarely call, so detection + following largely by listening for branch cracks + seeing waving branches. All animals in forest have completed molt and seem to be in good nutritional condition. | Lindburg says forest groups sometimes out on short grass or in isolated trees at edge forest, + thus easy to watch. | No sternal edema in sex skin seen, tho males mod. reddened. | As contrasted to Cayo Santiago, animals quiet + widespread - often 50+ yds. between members, it appears, + imm. on edge of (or tail end of) group. | Lindburg has "lost" group of 30± he had been studying, + has not found them for several days.

7 August 1965. Again ^{searched} trails + sat forest with Lindburg.

We met group 20+ (60?), including many imm., in dark forest. Several picked + ate mushrooms Y about 3" diam., pink top when ^{mature} eaten, dividing gills , no annulus or vesicles.

Macaca ^{mulatta}
~~fasciata~~

7 August 1965

Nr. Dehra Dun, U.P., India

When severely run, as in alarm, stay on ground, & sound on leaves like start of heavy rain shower. Few calls; once imm. on ground gave location grunt, & sev'l nearby did same then. | Compared to Cops Sartoris, quiet, widespread, separated from neighbors. || We visited groups 30± in grounds of Forest Institute. At least 8 infants; no old ♀ w/o inf, but one about 4 yrs. w/o. | All adult ♀♀ molting, one crown only, some with long gray hair only lateral thorax. 3 ad. ♂♂ seen; one w. tail prominently up, ^{hair} lower jaw protruding, & tail ~~was~~ curved to one side; apparently #1. One w. hole in R. cheek pouch obviously much lower in rank. About 1/4 mile from others a single ad., prob. ♂. | Lindburg may make some social behavior studies on this group. Sex skin very red on 1 old ♀, mod. red on sev'l; males mod. red. Male #2 sat close over ad. ♀ in tree; rarely consorts? Then at edge large block of pines with 10-15' ^{under} ~~over~~ story, thick; probably largely dependent on feeding by people.

8 August 1965. In 3 hours in forest area detected none, tho saw groups of langurs. Population density apparently ^{low}. Large dung beetles roll away dung balls soon after monkeys pass. Saw eating fresh new distal part of shrub, so some monsoon affect on nutrition.

~~Mangabey~~ Colobus (Procolobus)
Cercocebus = [8 Sept. 1965] badius
 Identified

24 August 1965.

Kibale Forest, Ft. Portal, Uganda.

sure
C. badius

On road S. of Kagera sawmill, 1 mi. S. of Nyagata R., at 12:10 p.m., saw group 12±. Light grey with rufous crown. First impression of many. Sevl in slow succession jumped to second tree - notably they dropped about 20' feet under them, rather than springing across w. legs horizontally spread. One carried inf. at chest, & juv. (1 yr.?) next to it. There in 80' tree with mod. foliage about 50 yds. W. of road, .15 mi. S. of crest w. turnout. Light rain; animals active.

Rd. S. of Kagera Sawmill, Kibale Forest
 [0.2]

~~Cercocebus?~~
 = C. badius

27 August 1965. 5:45 p.m., 400 yds. E. of Km. 6 sign, one (apparently brown fuscus mangabey); black back, gray legs, long black tail, brown crown) in nearly bare tree.

29

Confusion
 Cercoc +
 C. badius?
 until
 8 Sept.
 ↑

28 August 1965. Across (E.) fr. Pritham's turnout, 0900, 6 in trees, & 15 ad. Colobus alys. within 100 yds.; one "mangabey" only 20 yds. from 5 Col. in tree (below & to side of them), but no animosity seen.

Kibale Forest

13 September 1965. About 1030, nr. mi. 1.1, one in bark with 1 redtail & 7 Colobus alysimium. Peaceable; within 6' of an alys. at x. The redtail to it & the badius ground it.

14 September 1965. 1000, nr. mi. 5.5, 10± in trees nr. Mpanga R.

Cercocebus
Cercocebus alb.
 (mangabey)

Black, gray-brown shoulders & nape; scraggly long hair, esp. nape, & tail tapered. Head silhouette S. / Near gp., 2 C. bad. and 2 Cerco. ^{ascans} nictans. Soft gurgling vibrating call, repeated, from there. Move slowly, cautiously, compared to redtails - in line. Tail often [over]. One w. inf.; at least one juv.; saw 6+. // Col. badius - 1000, nr. mi. 5.5 when Cercocebus & redtails in trees. 1220, nr. mi. 2.95, E.

Prob.
Cercocebus

Colobus (Procolobus) badius14 September 1965Kibale Forest, Toro, Uganda

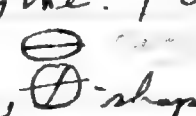
8 ind. 2 w. largish inf. / 1300, mi. 1.2, w., one fed w.

5 C. alysicinus on leaves tree. / 1800, m. Felitoli house, one fed same lush as seed Col. alyss, within 6' at X.1845, same one 70' up dead stub w. 4 Col. alyss, well after sunset. 6:58 p.m., it bounced same on branch; a ♀ C. alyss moved from perch, ^{the red folder} + ~~red~~ took the place. It sat within 6' of C. alyss at slightly lower level; about 7pm jumped into nearby ^{well} leaved tree.17 September 1965. One fed 100' from several C. alyssin in tree nr. Pritham Rd. (0.2) about 1145. / about 1740, mi. 0-1.3, large + smaller dark N. (W. side road) three trees, rather richly it appears. They seem to jump up when crossing gap, rather than just out. / 1900, Pritham road nr. 1, 200 yds to NW, 8, incl. 2 juvs. ^{playing} ~~play~~. In fine branched tree gran leaved tree w. little foliage. soon saw 13 spread 100 yards in 3 trees, feeding very actively - much more active at this late hour than Col. badius alyss.18 September 1965. 0840, at least 7 in 3 trees in area where seen last eve. One ground other. Feed on small green dist. ^(or infant) ~~leaf~~ pulling branch to mouth. One small juv., 6' from adult. /20 September 1965 0850, mi. 1.15, 3 ad + 10 juvs. to W 0815, 2 about 200 yds. N. Pritham's Rd. / 0850, at least 4 ad. + 2 juvs. to E. road at 1.25. Occasional high squeals, or sounds like small dog barking - no Col. alyss-like sounds. By 0915, apparent about 20 or more. Jump + move much, back + forth, not progressing only one way. Finally proceeded to S. in rough succession, + I counted 12 with infants carried,

Procolobus badius20 September 1965.Kibale Forest, Toro, Uganda

some very small, others fairly large - so apparently a limited breeding season! At least 12 more ads. + juvs., so $25 \pm$ total + 12 infants. Bands larger than of C. alypsiniscus. / 0955, still some in same thicket, 25' up, W of 1.17. / 1050, at N. edge of tea field about 200 yds. NE of Prithani's house, in 90' bare-appearing fine branched tree (tiny new foliage) 200 yds. from foot tea field, at sharp edge of dense tall forest, 8+, mostly m. top, + actively feeding + jumping about.

21 September 1965. There still there next morning before sun rise, 0650, at least 6 in one bareish tree. At 0835, at least 8 there including juv., and 2 mangabeys below the C.I. (the latter striped bark.). 0845 I walked thru tea toward tree, + a few at a time monkeys jumped to heavily foliated adjacent tree or descended lower in same tree, to foliage area. Allowed approach to about 50 yds. bare tree (^{B&W} photos), when 90' up. Bareish tree perhaps girdled + dying. / 1000, mi. 1.9 to E., 10+ (20?) in mod. foliage tree + bare appearing (tiny new green) tree. Latter 60', + 6 \pm in top (silhouette photos). Eat tiny foliage. B&W barrel landed in tree with monkeys; no interaction. No info. noted (poor light).

23 September 1965. In forested corner at NE corner Prithani's estate, 10 \pm mi. W. 5 \pm C. alyps. scrambling thru leaved tree, prob. alarmed by me. / 0810, same gp., 2 or +, in top 100' mod. foliated tree (4" leaves,  shaped), incl. inf. + juv. This 100 yds. from previous tree, 200 from where large gp. seen in eve at edge forest (prob. same gp.). Eat leaves or petioles. Two went thru tree + sat 100 yds. N. of others. / 1735, after rain showers, 16 in one near bare (fine new leaves). Tall

(Pro) Colobus badius23 September 1965Kibale Forest, Toro, Uganda

tree at edge Pridham's forest, 200 yds NE. of house. Feeding. at least 2 more within ⁵⁰100 yds. Juvs. played together; 4 at once. Adult often carried one. at least 6 juvs. total. (Part gp. in tree where 2 C. alyps. seen about 1630). Easily visible w. naked eye from Pridham's house.

24 September 1965. 0745, several still in barish trees at edge ^{tea} tea field where seen last evening. Struts; light E. breeze. / about 1115, start "Chimp Path" at NE corner Pridham's tea, 500+; 15-20' up in 100' well-leaved trees, 50 yds. from gp. 7 or + C. alypsinensis. / One ad. in band C. alyps. near mi. 1.4 in eve.

25 September 1965. 0800, at least one in top of barish tree (Celtis? 300 yds. NE Pridham's house, as yesterday morn (same tree top). 0845, one with 5 C. alyps. at mi. 1.45 W, as last eve. Gave single high "wringh." / 5 pm., 200 yds N. of Pridham's house, 4+ in sparse foliated Celtis top; 4 mangabeys within 50 yds. / 1730, one with gp. 4 or + C. alyps., as seen here before, at 1.48 W.

26 September 1965. 0810, from Pridham's house saw a few in forest edge 300 yds. N.; at edge tea field, as usual. Mangabey within 50 yds. / 0840, in Pridham's NE corner forest, 4 ads. plus small + larger juv. in near leafless tree. These 100 yds. from gp. 7 C. alypsinensis in more leaved tree. One being casually by one hand, looked about, then climbed up (can't imagine C. alyps. doing same). The juvs. wrestled gently. / 1610, 2 fed top tiny leaved Celtis nr NE corner tea field (tree 200 yds N. of 2 on Pridham's Rd.) 1753, ^{mile} 3.7, 8+ about 200 yds. E. in trees.

27 September 1965. 0810, 15 yds. N. Pridham Rd. 1.5, 6; redtail 15' from same; usual sparse foliated Celtis (?). Two other redtails in another tree. / 0910, 1.33 ³ _{E.}, 2+2 C. mitis in ^{same tree!} Celtis trees.

Colobus badius27 September 1965
1.35 E.)

Kibale Forest, Toro, Uganda

One w. infant. One ^{w. inf.} sat same tree as 3 C. alypsin., within 5 yds. all + 3' of one ad. / Yelps like tiny (Panamanian or Peruvian) dogs, yip, yip, made by C. b. yps. / 1025, tree W. of 1.0 where sev'l C. alyps. earlier, now 2 C. badius. As I appr. to 100 yds., these descended + entered tree where sev'l C. alyps. rested. (Two of latter dashed away, but soon returned.). C. b. ad. sat $\frac{1}{8}$ ' from each of 3 ad. C. alyps. / 1600, $\frac{45}{8}$ in barish treetops nr. Pridh. NE corner tea field, ~~200 yds. N. of~~ in area 200 yds. N. of Pridh. Rd. (Probably same yps. as ranges to 200 yds. N. of Pridh. House.) Others in similar trees to E. / about 1015 saw one around tree where 11 C. alyps., nr. 0.3 E, + possibly displace one (see C. ab. notes). 1050, 6 (1 juv. (yeling?)) feeding in rain in Celtis (?) nr. NE corner of tea field (N. of P.R. 0.2). (C. alyps. comes in rain like rhesus; C. b. feed actively.) / about 1400, 3 in area of 5 ad. ^{C. alyps.} near Pridham's NE corner. 1505, 3 or + within 200 ft. of 4 ad. C. alyps. at 1.4 E in trees.

29 September 1965. Altostratus; calm. about 4 a.m. saw none from Pridham house, or in walk along forest edge + N to creek on Chimp Path, + back to house. ~~also unusual not to see here.~~ Kagera SM rd. 1.15 W., 3 (perhaps 1 sep. from others). (In area were 3 C. nictitans.) / 1.3 W., 4 in Marlebania tree; fed (on foliage?) + 1 infant. about 0930.

30 September 1965. Kagera SM rd. 0.4 W., in Celtis tree w. small leaves + flowers, about 12 including 3 \pm juvs. and 4 carried yfs. 1 one yfs. small + crowns dark gray rather than reddish. About 3 of these went 10' to tree where 6 C. alyps., + both fed in same tree, often

Colobus badius30 September 1965Kibale Forest, Toro, Uganda.

within 6' one another w/o apparent interaction. Rolf saw intersp. action: ♀ ad. C. alyps. chased juv. C. badius, then large C. b. chased back the C. alyps. Other similar obs. A big C. b. seemed to displace ad. C. alyps. on perching place. One ad. C. ab. gave feint at ad. C. b. No clear interspecies dominance etc. ad. C. ab. dom. over juv. C. b., and prob. big C. b. dom over some (♀?) ad. C. ab. About 1730, 1.3 W., 10 ± incl. incl. 1 or + juvs., 1 or + inf. - move about much so very difficult to count. 1.3 E., 3 in area of 4 ad. C. alyps. When a truck passed on road, one came bounding thru tree towards us as if to threaten, & stood giving "chi, chi" calls (red mouth lining conspicuous); shook branch as if in threat. Brown eyes match crown. Some in Markhamia. One within 10' of 2 C. alyps. in same tree. C. badius groups diffuse - hard to tell whether a group or just scattered, at times - possibly join just to feed.

7 October 1965. Driving S. on sawmill road, mi. 1.35 ^{W.} E., seen in tall spreading Balanite & other trees. In first at least 5 ad. + 1 or + juvs., & 5 ± in another tree 50 yds. distant. One walked 20' to another, lay prone, & was groomed. From S. came an ad. C. alyps. thru tree where 5 C. badius; then a no overt reaction. Shorea. / 1.35 W., 7 incl. juv. and infant in Balanite, where one or + C. alyps. now.

8 October 1965. 1745, 1.36 W., 12 ± incl. 2 juvs. + inf., in some of same trees as last evening. Sevilate in dense foliated small of sp. I do not ^{tree} ~~appear~~ think used by C. alyps. Some in the tall Balanite & one seemed to eat foliage (C. alyps. not seen to). / 1.45 E., a single one

Colobus badius8 October 1965.Kibale Forest, Toro, Ugandato within 6' of one C. alyps. in gp. of 9 latter.

10 October 1965. In forest patch .3 to 1.3 mi. S. of Kanyavara forest ranger's house, saw band of 7+ (2 juvs.) - prob. 10+, in green foliated tree, 60' up. Mod. dense forest; to 100+ ft. trees. In Kerigami estate area, none seen along border tea field N. of Pritham Rd. for long time. (Have leaves matured too much in feeding trees?)
11 Oct. - see next page)

12 October 1965. In morning, Carla + Kristi found 8 or +, incl. inf. small inf. and a juv., in trees near 1.25 W., the big Balanite tree at first. Monkeys made chirping sounds, & later came closer + made calls. Impression of being different from C. alyps. in being more apparently aggressive → observer. / about 1545, I saw in same area, 1.27 W., ad. w. inf. (black crown) at abdomen.

27 October 1965. Sammill road, 1.25 W., about 1730, one in crown of 100' Balanite. One within 20 yds. of 2 C. alyps ads. at 1.7 E. / about 1800, in forest edge NW of Pritham's house, 6 or + about 40' up, going N. through trees, well spread out. Isps. seem more diffuse than C. alyps. Spread 100 yds., following about same route in file.

28 October 1965. Carla in field 0830-0930 near NW corner of Kerigami estate + "chimp patch" from NW corner to stream. along forest edge to NW of house saw 10 or + (2 juvs.). at N. side of start "chimp path," 10 (1 inf.; 2 or + juvs.; 1 pregnant?). Near stream, 1 squeaked + 2 others heard. The one, alone in tree, broke off branch, carried across tree, then dropped it - excited by observer prob. with more excitement, barked. / To N. of this one, 5 monkeys in tree including C. badius, ^{Cerc.} mitis, ^{acroni} nectans. and

Colobus hadius

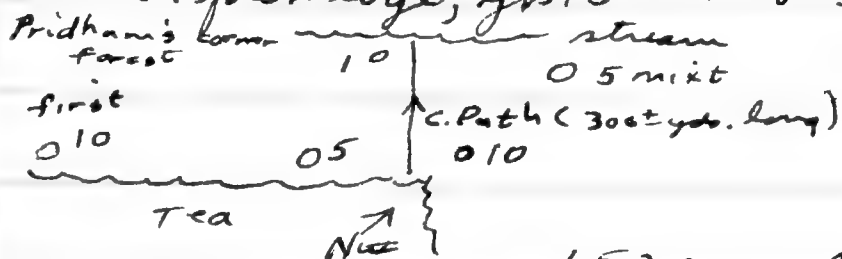
11 October 1965

Kibale Forest, Toro, Uganda

1035, 1.25 w., in big Balanite 4 + (1 juv.). Facing observer, call "chree" at people. Variety of low short squeaky calls.

Colobus badius28 October 1965.K. Belt Forest, Toro, Uganda

back at forest edge, gps. 5 or + to 5. (part of orig. 10?).



1520, near Chimp Path by stream, 10 (incl.

2 juvs.) + or 2 inf. (carried), & probably 15 or more. Much jumping & movt.; hard to keep count. Seem to grab single branch w. hands in landing, rather than sprawling on mass of foliage & branches. About 40' up, in open to mod. foliage.


30 October 1965. Saw one within 50' of 3 C. alys. at 1.7W.

Tree at 2.1 E., where once I shot a sev. w. hornbill in apparently leafless tree, ^{now} moderately leaved out - got tiny new leaves!

2 November 1965. About 1030, at W. edge swamp at Sami Rd.

0.8W., about 40. At least 3 inf. carried, & 5 larger inf. (red-cranes). A redtail sat alongside one; possibly gr. by C. b. By 1050, sev. of gps. 50 yds. separate, to SE of road, & at least 2 C. alys. near them (10 yds.). At least 21 apparent adults. 17 within 20' sphere centering in dead messy 20' much branched tree at edge swamp. 1058, counted 39 incl. inf., w. 2 C. alys. and 2 redt. at SE edge, & one redtail in same tree and among 15 ± C. badius, & juv. C. b. rubbed against redt. in passing. (The C. alys. gps. at N 5W edge = 6.) 1106, spread about 100 yds. total. / One carried 2' strip (Typha? leaf?) in mouth or climb thru branches & leaped; ate at it, & another grabbed ^{at leaf} as if to take leaf. Others held single green tree leaf in hand and ate at it, as ice cream cone. Many descended to level cattoils at times, occas. dropping straight down to ground. One ate at 0 fruit (10 mm) of Carapa? (large.

Colobus badius2 November 1965Kibale Forest, Toro, Uganda.

thick leaf; terminal ones red. Some had muddy post. thighs + hind-legs. 1130, still 15 or + at site where first seen. Bright, overcast. 1140, at least 2 inds. w. black crown; one of these to 1' from ad. One subad. on low flexible branch; hand over hand, hanging, to long-tip twig. They hang by one hand a few sec. & dropped straight to ground. At least twice saw one ad. groom another; about same manner as rhinos. Twice more saw one climb up branches from swamps carrying long green Typha? leaf in mouth, basal end ^{roughly} ~~showed~~ broken. Ad. gr. & w. inf. One in small Marlehamia ate green leaf. 1200, still 20[±] in original ^{edge} area W. of swamps. One had bulgy abd. as if pregnant. Another w. Typha leaf. Seen to eat at least 6 kinds foods so far; much more variety than C. alyps. 1207, still 6 or + within 10' ground over dense tangle herbage by swamps. Two were climbed up bushes carrying Typha leaf. 1230, still counted 20[±] spread 100 yds. nr. O. 8 W. Showers common. Some moved higher, as if in response. One plucked leaf of compound-leaved tree (20[±] leaflets), ate at base petiole, & dropped; repeated. (Never saw C. alyps. eat this tree). Little mist about in rain; a few eat & others sit hunched forward in rain. None below 20' now. Rain continued. / 1310, 7 25-40' up one big tree; most hunched forward & quietly sitting; some ate. Showers still. / Rain to 3 pm. Cleared much afterward. 1620, O. 9 E. 300 yds. nr. O. 85 W., 6 or + still, near road. One gr. another lying prone facing away; then groomed raised hindquarters & gr. cont.)) . 3 or + in 15' Trema trees. Smaller appr. larger on branch, turned & crouched w. arms toward larger & tail up, then away (present?).

Colobus badius2 November 1965Kibale Forest, Toro, Uganda

The group spread 200 yds. now, 10 or + about 50 yds. of main site first seen this a.m. Sevl on single & thick branch of 80' tree, in open. But some jumped to adjacent tops. | Ad. w. juv. ascended a dead tree. Ad. jumped 8 ±' across to another. without hesitating juv. ascended first tree 10', went out branch over second, jumped down into it, & climbed down to adult. ^{Smart} Smart juv! 12 or + in one tree top w. mod. thin foliage.

3 November 1965. 0815, 0.9 W., 1 ate leaves (Olea?). (about 3 red tails in low Trema nearby.). / 0.55 W., 4 or +. 2 within 50' of gps. C. alyps. / The 0.9 one in tree where sevl C. alyps photoed about ³2-3 weeks before. Also, C. ab. in tree where C. badius a few min. earlier, m. .5 W. / 1710, 8/10 overcast, calm. 0.75 N., in Marthamia?

4 November 1965. Sunny after fog. about 1040, 3 in top tree + apparently feeding on 6" simple thick dark-green glossy leaf. (not One dropped, after holding on hanging by one hand, to swamp ground, then to perch on down log, then on ground → reeds.



5 November 1965. Near swamps at 0.8 W., 1130, after rain showers - ^{0.82 W.} 0.75 W., 7 (2 juv), eating small dark leaf of 80' tree, and at 0.75 W., 12 (4 juv) in 3 trees (one Olea). Lately common ^{here}. Evening, about 1630, 4 or + 0.85 W. about ¹⁸¹⁵ 1830, 14 + at 1.1 E, eating large (8") 7. simple leaf (= ?), not a food seen eaten by C. alyps.

(blue monkey)

Cercopithecus mitis22 August 1965.Kibale Forest, 7 mi. E. Ft. Portal, Uganda.

about 6:50 p.m. I saw one gp. of ^{7 or 8} 5 in tree in sparse foliage about .7 mi. S. of Kagera sawmill, within 1/4 mile of road camp, by road. ~~Twice at other sites I saw 1 only.~~ | About 10

24 August 1965. About 10 a.m. saw 1 alone, & .2 mi. S. of Bridham [= mi. 1.3]

Turnoff of main rd. S. from Kagera sawmill, adult, about 30' up. Photosed jump (b4w). | About 4:30 p.m., in second forest patch (about 1 1/2 mi.) E. of Kanyawara Forest Sta., saw gp. of 5± in dark tall forest, about 40' up. Later, about 5-6 p.m., saw gp. of about 7 in dark forest about 300 yds. inside first forest patch to E. of Forest Station. Twice saw one adult grooming another. Once saw two about 10' apart eating leaves. Leaves about 6" , apparently slightly pubescent, of 20 ft. tree w. flowers  terminal, nr. white. They folded leaf & ate at underside edge, or ate at flat part & pulled out piece leaf, leaving the big veins. Blue groups seem different compared to Colobus, & perhaps smaller. I saw one ad. alone in crown tall tree over road, inactive at 6:30 p.m. Many tall umbrella-topped trees, as if forest nearly mature. Little sign of truck traffic.

Q.E.N.P., SW Uganda.

²⁶27 August 1965. About noon I saw one ^{Marangambo} in forest near Kaizi River in Queen Elizabeth N.P., from road bridge. Nr. Fort Portal, Uganda

^{6:05 p.m.}27 August 1965. About km. 6.5 on rd. S. of Kagera sawmill, 2 ad. in sparsely foliated broadleaf tree, 30' up 30' tree. | About km. 6.8, 6:12 p.m., 2 adults on thick bare branch 60' upon 80' tree; little foliage. One groomed other; still there ^{1/2 hr} later, after rain shower (one larger than other). | 6:55 p.m., about km. 6.6, one 25' up ⁱⁿ clear under mod. foliage, 50 yds. ^{from} S. road.

blue

Cercopithecus mitis28 August 1965Kibale Forest, Nr. Ft. Portal, Uganda.C. mitis

0910, nr. road on ^{Kogera} Sammill, 1 ad. 20' up, feeding on fr. or foliage; when I to 100' it gave short coughing "caa"s for $\frac{1}{4}$ sec. at 5 \pm sec. intervals, repeatedly, mouth opening 1" with each call. Alone. Light grey muzzly.

C. l'hoesti

29 August 1965. Nr. mi. 1.3 on Kogera - Kanyawara road, one long black-tailed monkey ran across road; thought this kind!

C. mitis

Mile 1.8, 0955, one in yellow-flowered (Markhamia?) tree gave single explosive cough, caaa or haash at irreg. intervals; alarm? When I to 100', it descended tree. 1 about mi. 5.4, at ^{big} turnout, one with 7 or 8 redtails in group.

C. mitis

28 August 1965. 6:40 p.m., nr. mile 1.4 on rd. S. of Kogera Sawmill, 5 (1 juv.).

C. l'hoesti

4 September 1965. About noon, nr. mi. 4.8 on S. Kogera SM rd., about 5 monkeys crossed road, tails high, singly. Some looked all black; some with red brown on back, + glimpses there in trees showed broad white collar at throat, the typical "blues" in groups - do immos. have white throat + brown backs? This is 3rd. time we have seen monkeys on road, + always seem to be there "black" ones.

First good view

6 September 1965. About mi. 5.7, near large logging turnout on Mpanga R. side, nr site where elephant shot ^{day before} yesterday, a band of about 10 monkeys crossed road from W. to E. These had red-brown backs, very black thighs (+ sharp division w. brown at side ^{brown} black), white throats, + seemed larger than

C. l'hoesti

C. nictitans. Even 2 juvs. had white throats, + none seemed to lack. Surely not C. mitis - probably C. l'hoesti.

Cercopithecus mitis13 September 1965Kibale Forest, Torq Uganda

about 6:30 p.m., one eating yellow Markhamia flower buds at edge
 gp. 5 Col. alyps. at mi. 1.0 on Kagera SM road. Another 200 yds.
 S, alone, high in tree on branch, not feeding.

14 September 1965. 1230, mi. 2.9, + to E. One called cheow -
 loud stringy cough repeated at 5-10 sec. intervals; alarm call?

15 September 1965. 1530, mi. 1.13, one, alone, gave cough cry.

17 September 1965. 1755, mi. 1.45, W., 2 ate Markhamia flowers.
 Mi. 1.45, E, 1 10' up tree, alone. At

18 September 1965. 1820, mi. 1.15, 3 to W. in Markhamia & other trees.

19 September 1965. about 100 yds. E. of road along Elephant Control Path,
 1010, 6 or + blues in mod. dense foliage. Tails seem longer than
 other species. One juv. (yearling?).

20 September 1965. 1540, mi. 1.5 W., 6 or + with 3 redtails.
 (+ C. nicotianus)

Blues eat flowers Markhamia (so do C. alyps.). Most redtails
 at lower level, down to 15' high. Blues widespread; 10-50 yds
 between inds. One juv.; yearling? Blues + redt. eat flowers same
 M. tree, 5 yds. apart.

21 September 1965. about 1/4 mi. E. of Bannell entrance, on N. side
 highway, 4, incl. one half grown juv., in ^{20'} 15' bushes. Fed on fresh
 green leaves where their foliage. | 1630, mi. 1.3 W., 3 in one Mark-
hamia tree eating flowers; earlier a redtail in same tree (which given
 way?). | 1645, mi. 1.6 W., where 10[±] redtails seen about 1800 on 2
 previous even, 10[±] blues (incl. juv. and one tiny but not carried)
 with 10[±] redtails in mixed group going through mod-foliated trees
 in rough procession, many following same branches; also one
C. bodius in group. A large blue mounted smaller as if in copul-

Cercopithecus mitis21 September 1965Kibale Forest, Toro, Uganda

copul.?

atari & stayed mounted $10 \pm$ sec., as if in copulatory pause. Then the 2 separated w/o interaction. / 1820, mi. 1.8 E, one ate flowers Marlebhamia. Habitat seems same as nectitans, but fewer, groups smaller - neither seen to carry young, I think.

22 September 1965. About 0930, mi. 1.3 E, 1 blue and 1 C. bodius.

Blue to 20' Marlebhamia + fed on flowers; still there 20 min. later.

24 September 1965. Mi. 1.68 E, 0829, one adult. / about 6 p.m., mi. 1.32 W, 3; one 20' from C. nectitans in same tree. About 1650 I saw one at mi. 1.55 W.

25 September 1965. 0903, mi. 1.8 W, 5 in Marlebhamia + other trees. One gave frightening sudden loud call, "nyeeah", alarm? At least 2 eat yellow flowers Marlebhamia. Vids spread wide - 30-40 yds. apart.

26 September 1965. 0840, Pridhamia NE corner forest, ad. and juv. in Carapa (? - large leaves; many spherical 10 mm green fruits). One to 3' from a C. nectitans in another tree. / 0.9 E, 1000, 4 with 2 redtails eating fruits Carapa (? - 10 mm. green spherical). Included one juv.

27 September 1965. 0910, 1.33 W, 2 in Celtis tree ^{same tree!} near 7 C. bodius. One picked & ate small new leaves, pulling branch to mouth. / 1.75 W. about 1730, one w. small black inf. One ate yellow Marlebhamia flowers. / Mi. 2.1 E after rain showers, 1 in Marlebhamia tree.

29 September 1965. About 1730, $6 \pm$ and $3 \pm$ C. nectitans at 1.68 W. Two large coffee bushes may be the attract-
ion; redtails seen to eat ^{fruits} ~~leaves~~.

30 September 1965. 11 a.m., 1.8 E, one in Celtis tree. / about 1730, 5 at 1.5 W. 1.55 E, 3 or 4 (juv.), in area 3 or 4 C. nectitans. Calls of blue

Corrop. mitis30 September 1965Kibale Forest, Torq Uganda

when feed a weak gurgle a short grunt; location call? Same in Olea, but not sure whether ate it. One C. nict. in same tree (Trema?) w. blues. 1.65 W, ² more ate Marlebhamia flowers. / Kristi K. said she saw a ^{blue} give way & leave perch when redtail approached, & redtail then occupied the perch (supplant?). / Saw none along Wosa R. in Toro Game Preserve, tho saw C. nictitans there.

6 October 1965. Road S. of Kagera ^{savannah} ~~savannah~~, @ 1.55 W., 1755, 6 (no info.) feeding in Marlebhamia, mostly on flowers. A Cercocarpus sat in sep. tree about 50' from some blues. 1.56 W, 3 more ate Marlebhamia, & 1 seemed to eat Celtis. 6 C. nictitans scattered in vicinity.

8 October 1965. 1815, 1.55 W., 3 or + (2 were fuzzy jiv.).

10 October 1965. Mr. Kanyawana forest sta.; first forest patch, saw sev. in evening. 2 within 5 yds. of a redtail. Blues ate (lvs.; flowers?) of bay-like tree (rough bark; 1 leaf, no odor).

11 October 1965. No overcast, bright. 1030, mi. 1.13 E, 6 or + blues (incl. 1 large jiv.) about 20' up in small trees. Possibly more crepuscular than redtail, but out in mid daylight too.

12 October 1965. 1530, after rain, 2 or + feeding in tree 200 yds. N. of ^{0.15} ~~0.22~~ on Prith. Rd. (Left Ft. P. area Oct. 13).

18 October 1965 ^{Siti River,} Kavkwata, Mt. Elgon, Uganda

In evening heard one give "meow" a few x to E. of "fire tower" of softwood plantation, in forest at edge plantation. Calobus abyssinicus in area too.

20 October 1965. From "fire tower" about 5 p.m., groups of 6 or + at edge forest (& plantation) to SW, ^{about} 40' up in mod. thick

Cercopithecus mitis19 October 1965Kapuata, ^{NE} Mt. Elgon, Uganda

foliage. (Colobus alysicinus within 100 yds.) Heard "nyawh" other xx.

21 October 1965, about 3 p.m. heard one from "fire tower" to S. on near side Siti River (Col. alys. also in area). Saw one on open branch at sharp edge of forest to NW. From front appeared black except for face area. It stayed same perch $\frac{1}{2}$ hr. +.

27 October 1965Kibale Forest, Toro, Uganda

1500, overcast, ^{near} at NE corner tea estate, one ste yellow flowers in Samia(?) there 1800.
60' Marlehamia; Sawmill road 1.7 W., heard one at 1610, nyaw.

1.8 E., 2 in Trema, eating leaflets from tips. 1.9 W., 1 ad. 10' up in Trema. 2.0 W., 2 20-30' up in Celtis (?) tree; one called; another "nyaw" 200 yds. S.

28 October 1965, 1605, one in Marlehamia. No others seen in slow census drive 0.3 to 2.1 on Sawmill Road. Drier than yesterday.

29 October 1965. Saw one 1.6 W., morning. None in evening walk from Prichard's house to 2.1 and return.

30 October 1965. About 1715, one sat quietly on thick open branch 20' up, while ^{190 yds.} ~~short~~ away a redtail 30-40' + actually feeding. Gen'l - blue more inactive than redtail? lower? /
Heard 1 call "nyaw" at 1.9 W. 2.1 W., 3 ^{+ large juv.} spread 20 yds. in top of tiny-new-leaved tree w. simple ovate leaves (not Celtis or Marlehamia). 100 yds. from me. One called "Nyaw." 1735. Have not before seen any monkeys in this tree, in oft surveyed area.

1 November 1965. Sawmill road, 1540, 1.2 W., at least 6 in area. 2 in one small tree (3 redtails within 100 yds.).

S

contin. →

Cercopithecus mitis1 November 1965Kibale Forest, Toro, Uganda

at least 3 (one

juv.) in big Balanite; one lay prone on thick mossy branch, resting (?). Tails usually T in walk. Prob. 6-8 blue in area of 200 yds. here. and 4 more across road at 1.3 E. Spots sunshine(3 in 10 yd. diam.) after rain brought out? Mostly in Marhamia & Celtis. Some in same trees as I saw Colobus badius recently, nr. 1.3 W. Two followed, one after other, same "path" thru branches going 5, & another ± 3 min. later. One $\frac{1}{2}$ grown juv. seen in big Balanite.1.6 W, blue call "nyaw." 1.7 W, one 20 \pm yds. fr. road in 15' tall dense large (6") leaved bush (D); ^{ate.} which there. (^{one} in same bush $\frac{1}{2}$ hr. later too.) Many blues today; why?2 November 1965. Morning, one stop dead top tree, another 30' lower, 0.85 E. 200 yds. One "nyaw" toward me on road. 1630, 2 0.9 E. 50' away, 15' up. Rather tame. / About 1600, 2.0 W, 1 blue called. 2.15 W, 2 in crown new fire foliated tree, ^{low} as right out. 30, 60 \pm ' up.3 November 1965. About 0830, 0.8 W, 2, single bl / On highway about $1\frac{1}{2}$ mile E. of Sawmill, 5-8 blues spread 100 yds. One in $\frac{1}{2}$ dead top at edge forest; descended in alarm & went toward others. One in big hut dead tree. / 2.02 W, 4. A smaller group a very large one. at least 3 C. l'hoesti within ⁵⁰ 30 yds. / about 1730, 1.55 W, 1 in crutch about 12' up, nr. road.4 November 1965. 1035, 0.82 W, loose gp. 3 blue, 1 red, 1 red ^{+?} colobus. 1.0 W, one. 1.5 W, one 12' up on trunk Trema, closest to road. / about 1800, at least 3 in trees at 1.96 E, another 50 yds. distant; much Celtis here.5 November 1965. About 1510, Pied. Rd. 1.55, one called. I walked 5.18 W; about 9 W. about 9 C. mitis in loose group, the blues in larger

Cercopithecus mitis5 November 1965.Kibale Forest, Toro, Uganda

clumps hut after night in order. 2.15 W., 1, + 1 redt. ^{walked back} ~~Walked back~~
 to 1.75 W., about 1620. 1.75 W., 7 blues (2 juvs) + 1 ge. inf. (not carried),
 all in shady low site about 20' up; 2 redtails within 100'.

7 November 1965. See census. 1.35 W., 2 in 100' big crowned green Ficus,
 + 3 in nearby Celtis.

Nr. Maiben (nr. Kibale), Kenya

13 November 1965. Saw one + heard at least 2 in evening in riverine
 forest (thorn trees mostly) on Maiben River on P. Luther ranch.

Z

Ceropithecus l'hoesti8 September 1965.

Kibale Forest, Toro, Uganda

From skin at same Dept. Entable, identified as this species, known from Imperitible Forest. [L] ^{recently} Had seen in Kibale Forest, 6 mi. S. of Kagera SM.

24 September 1965. about 1830, after rain, at mi. 1.68 on road S. of Kagera Sawmill, in area where several rattlebacks or blues seen on same previous even, saw one [♂]. It walked out on branch about 8' up, in opening in trees, & stayed while observed from 20 yds. Throat white; grey below eyes; mostly black, but distinct red brown area on back, & base of tail (ventral black) while center tail gray & tip larger & black. Scrotum pale blue-white in field of black, very conspic. in rear view. Still there 1/2 hr later, & also next morning ^(25 Sept. 1965) about 0900 on same branch. No others seen. Movements jerky. Form sleek & black-cat like. Tail once up in nice curve.

Kagera Sawmill Rd. to S. -
mi. 2.02 W

3 November 1965. In mod. thick Trema trees, at least 3 about 8' up. at least 4 blues in same gen'l area, & gp. of Colobus abyss. across road.

See C. mitis for 29 Aug., 4 Sept., 6 Sept. 1965.

Kigami area, Kibale Forest

First seen

23 August 1965. about 1230, about mi. 1.0 on Kagera Sawmill Rd. north, Carla K. saw 3 run across road (probably this sp.). We heard grunts in bushes, sounds running, but not up trees. Black w. brown sacral area.

6 September 1965. First good view of ^{groups} grays, Kagera Rd. (see C. mitis, p 2)

Pan paniscus6 September 1965

Kibale Forest, nr. Ft. Portal, Torog Uganda

Near Nyigata R. bridge on road S. of Kogera Sammill, about mi. 3.5, I saw adult and half grown about 25' up in 50' tree, 100 yds. E. of road. There on separate trunks ^Φ, + when we started to get out of car they quickly descended. This is same area where Carla ^{x.} [29 Aug., 1030, 15 ±' up] saw one chimp about a week earlier, + where A. Meyzer saw one once a twice (within 1/2 mile to S.). Pridham said had not seen one nr. Kigami tea estate for about 4 mos. Forest warden at Selitoli said often seen near main Ft. Portal to Kampala road nr. Mpanga R. (actually ^{seen} E. of county line).

21 September 1965. In morning men reported seeing near NE corner of Kigami tea estate (W. Pridham), + Pridham said heard there.

But later we visited area + saw or heard none. Small patch tall forest near stream there, + Colobus oliv. + Probus present.

27 September 1965. Rain showers about 11 a.m. I drove down Pridham's Road, + 100 yds. from Kogera SM road saw 3 ads. walk across road ¹⁰⁰ 50 yds. ahead of me, E. to W., and under thick herbs + shrubs. Last had lighter hair on lower back as if shedding. a few soft grunts in shrubs, but did not immediately climb trees. I left + drove up road 15 min. later; one was 20' up tree + descended as car approached. Then hunk mouts. for sev'l minutes.

7 October 1965. Along highway to Kampala, about 1/2 mi. E. of county line, walked up short dirt road and saw many clear footprints in dried mud, evidently made within 24 hrs. ^{mm}

^{Knuckle} Knuckle prints clear. Apparent adult, + only one size. Forest somewhat open here from logging.

Pan paniscus¹⁰
7 October 1965Kibale Forest, Torq Uganda

In area of Dura River bridge on road S. of Kigarama, nr. Bigodi, twice
 heard yelps + screams apparently of chimps. Closed 90' forest, ^{recent} evergreen, no ^{putting}.

12 October 1965. Rain midday; then stratus clouds. 1715, 1.45 W.

on sawmill road, 100 ft. from road in 20' dead tree partly covered
 w. vines, 2 ads. + inf. Also moit on ground, & call from forest, so
 apparently at least 5. (A few min. before in sight, I heard sev'l barbs
 from vicinity & thought it was Papio.) I stood in open 100 yds.
 away. Biggest (prob. ♂) highest, ate cordate leaves of vine Mentore
 (lvs. 12 ^{cm} diam.; pink-purple flowers.) Log truck passed on road; inf.
 to ♀, which held it to abd., & soon she descended, while "♂" continued to
 feed as truck passed. Dense berboze to 6', green, below tree, & a fair
 path where chimps had pushed way through it - good enough for
 man to pass. The tree 50+ feet from others, in open. Chimp broke
 off 3-4 cm. diam. top w. loud crack, perhaps to pull down climbing
 vine. Descended 1725, & off in berboze. I soon heard loud squeals
 & barbs from forest. Later heard from Bridham's estate, to S. &
 to W. - 2 gps.?

Mangabey
Cercocebus

14 September 1965.

Kibale Forest, Toro, Uganda

First seen. See Colobus bodensis notes. Saw 6+.

15 September, 1965. Mi. 5.5, nr. Mpanga R.; saw 4+ and 3 redtails in trees.

21 September 1965. I saw 2, one a ♂, below several Col. bodensis in bare-looking 90' tree at N. edge Pridham's tea field. There [14 Sept.] first mangabeys seen in area except nr. 1 mi. 5.5 nr. Mpanga R. They ^{look} bit bark from 3" diam. branches, (Celtis), apparently using lower incisor - I did not see Colobus do this. Barks did not strip lengthwise, so perhaps on dead branches. Several branches bared for a few feet, possibly by monkeys. 1040, mi. 0.4 E., one about 10' up in big bush. I approached on foot to 10 yards before it slowly moved away; apparently alone (near K-6 area). [mi. 0.2]

25 September 1965. 1700, 4 in trees forest at edge tea about 200 yds. N. of Pridham's house, 10-20' apart. Colobus bodensis within 50 yds. of them.

26 September 1965. 0815, saw 2 in trees edge forest at edge tea field, to N. of Pridham's house. ^{Both} One bit at bark 3" limb, Celtis and Olea (?), where limb already bared of bark. 1605, 300 yds. N. of Pridham's house, one 40' up in forest edge tree held 2" x 3" piece bark & sat by 3" x 10" stripped trunk deadwood tree (Celtis prob.). Broke off chunks bark w. teeth. Cercopith. + Colobus not seen to eat bark. 1815, mi. 5.6, 5+ to W. nr. Mpanga R., & 5+ more 200 yds. S. One carried inf. This is best area for mangabeys along Kagera SM rd.

10 October 1965. Kanyawara area, 4.8 miles into Kibale Forest from ranger sta., 70+ in 2 trees (Olea?) w. new terminal leaves, 30' up.

Cercocebus alb.6 November 1965Hima Block, Kibale Forest, Torii Uganda

09²₅, in green 100' forest along dirt road, 4 in one Celtis + 2 others within 50 yds. Some tore off 1 to 2' strips green bark, 10-20 mm. wide, by pull with teeth. By one, for 3' over half girth of 3" diam. branch peeled. Farther out, branch completely stripped of bark. Another tree, 3" branch completely peeled for 6+ feet. Do mangabeys strip Eucalyptus bark + Ralolus get blame?

20 mi. E. Kampala, 7± mi. N. Lugezi, Uganda.

11-12 November 1965. With Neal Chalmers, visited Malira (?) forest area where he studied. He said 3 groups in study area, about 1/2 mile diam. Said in denser part forest than C. nictitans. We saw one gp. 8±, with one carrying inf. Heard alarm calls, loud. An eagle (= ? - some crest, barred back) perched 100 yds. from monkeys may have been cause alarm. C. says these monkeys often strip bark of dying trees.

Papio1 October 1965Uganda
Nr. Wasa Bridge, Toro Game Preserve, Toro, E

In evening occasional loud sharp dog-like bark from forest riv.
 river, & soon 9^(3 juvs) in single large spreading tree with dull green large heart-shaped leaves. These within 50 yds. of ^{where} Colobus alyps. seen ^{earlier} earlier.
 A brown vulture w. white head sat atop tree, & once a flock of green pigeons landed there. Grooming common. About 60' up in tree, on large drain. limbs.

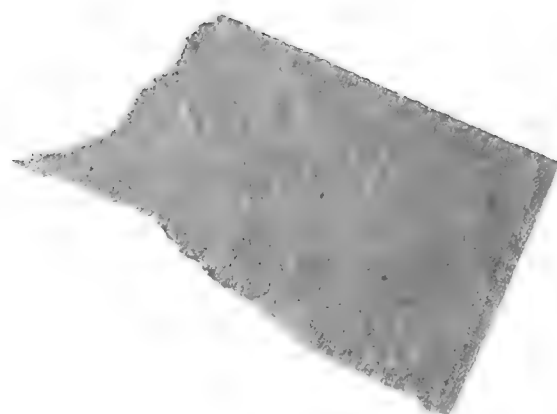
2 October 1965. About 0200 heard to bark, & Colobus in area to bark, as if from intrusion. 0700, still in tree (same), & noisy fight (?) broke out. Others ran toward the fighting sounds. None, apparently, by 0900, tho Colobus in night trees still. | Rain in afternoon. But baboons back in same tree before 7 p.m.

3 October 1965. Much barking & apparent fighting sounds 0630. Up left tree about 0730, & soon seen in bushes & small tree within 50 yds. of our tent. Occas. fed, but mostly sat, groomed. and still nearby at 0915. In 20 baboons, only 2 seemed to be infants, & seen juvs. Walked thru 2' high grass at times, & ascended isolated 25' tree. Allowed human approach to about 100' before descended. | Sp. settled for night 100 yds. W. of previous site.

4 October 1965. About 7 a.m. heard, but not seen, from camp. | About 1/4 mile upstream from game lodge in isolated tree & low edge bushes of forest, 12 (juvs. but no inf. seen).

6 October 1965. By morning, no others seen or heard near our camp, tho Colobus came as before. So probably variable in night resting site.

23 October 1965. I saw one atop flat-topped tree from road thru Rebasia game preserve, SW of Mt. Kodam, 2 p.m.



Species Account

1
[of 40]

E. Africa

also see
monkeys
AnoumColobus abyssinicus

Mawenge Co., Toro, Uganda

20 August 1965.

13 mi. ESE Kyenjojo Mawenge

Saw 3 in broadleaf tree, about 40' up, 200 yds. N. of highway in broken second-growth forest. Easily seen w. naked eye while driving.

The first I have seen in wild.

21
22 August 1965.

Kibale Forest, 7 mi. E. Ft. Portal, Uganda

Wm. Pridham, of Kigami tea estate, said now sometimes come to ground because of disturbed nature present forest. About 6:30pm I saw 2-3 groups + heard their calls at E. edge of his tea field. High in trees + most of them plainly visible. Largest gr. I saw was 9. Pridham said sometimes 30. Beautiful liapa, w. long hair apparently giving parachute effect. (P. did not know red colobus; prob. misident. as mang abey. Kingston, D.F.O., said a black form with red brown shoulders about 20 miles out from Ft. P. to W.). P. thought evening best time to see monkeys. Always along short road up to his estate, he said.

22 August 1965. At 0908, ^{100± yds.} to E. of road at K-6, mixed band of about 10 Colobus ab. + Presbytis nictitans (red tail, spot nose). Two adults with black infant, ^[juv. ?] (gray lumbar region (rather than white)). 3 juvs. mod. size, 6 ads. about 40' up, in mod. to thin foliage, broadleafed trees, at edge elephant grassland. // One ad. w. inf. Red juv. (gray lumbar) nr., + this one (sit ?) carried inf. then on venter, 3' below ad. (mother ?). A slightly larger juv. came. ^[transfer of infant] Then an adult, which took inf. + ran 5+ yds. away, leaving first ad. w. 2+3 yr. (?) imm., which did not follow. (The other inf. gr. by adult, while 2-3 (?) yr. juv. 20' distant in same tree. / Redtails within 10 yds. of colobus at time; I saw no interaction. / One colobus ate compound leaf, chew-

Colobusabyssinicus

sebitole

22 August 1965.

Nr. Sebitole, Kibale Forest, Ft. Portal, Uganda

ing long. / opposite road camp (3/4 mi. S. of sawmill), in tall trees, mostly above dense foliage, gp. of 5 and 7, about 100 yds. apart, in top 10% of trees. / Along Pridham road saw 4 or + about 100 ft. up, where little foliage; some on bare branches. / 1042, 3 or + to N. of teafield by J. W. P. house. / Drove slowly to crest about 3.6 mi. S. of entrance to Pridham estate, but saw no more monkeys (time of day? Overcast, bright.)

23 August 1965. ^{Before (N. of)} ^[= 0.4E] road camp, from 2 mi. S. of K6 on road, gp. of

6 ad., 2 juv. (1 w. gray lumbar), 1 white infant. Penis ad. ♂ visible at long range, pale flesh color on black; ♂ sat heavily astraddle branch. / about 0900, 2 mi. farther on, at curve looking W. over road camp, gp. of 5 in tall trees (took 35 mm. Kodach. slide). / 0905, walked up Pridham's road. 0958, 400 yds. E. of house saw 9 or +, incl. 2 or + inf., 3 or + juv. There in and on, above, thick opaque foliage of tree tops (35 mm. Kodach. of area). 1005, still there. / At 1020, walked E. on Elephant Control Path. starting about 1.3 mi. S. of Pridham's jet. 1030, saw 4 ad. (one sure ♂) + 2 inf. (no adult carried at vent). 1055 reached Mpanga R. & walked N. on trail. 1120, across river, saw ad. ♂ 70' up as thick limit of the 20 yds. from river. He looked quickly about as if nervous or trying to face away from us, 200 yds. away; second ad. 100' from him. Fine green foliage, mod. dense. No recent cutting here. Monkeys seem more common in disturbed areas or near roads. at 1205, ^{still} gp. when seen 10:30. / 6 p.m., 200 yds. N. of road, opposite Kagera sawmill road, saw 3 in trees.

24 August 1965. 0850, to E. of residence on hill at Kagera sawmill, in 60' bare trees, 5 ad. and 1 juv. (2 gr?). Apparent ad. ♂ (Cran ~)

Colobus abyssinicus24 August 1965.Kibale Forest, Toro, Uganda

[reciprocal groom] groomed ad. (♀?); then lay on side & ♀ gr. him. One of us approached to 50 yds., 30' below, & gp. descended, [alarm] alarmed. Juv. taken to chest by ad. & carried down. / 0935, km. 6 on forest rd. to S., ad. ♂, juv. (3 yrs.?), ad. (♀?), in same tree as seen 22 Aug. / 0938, came before road camp, saw none in 1/2 mile of treetops. Hat; 1/10 clouds. / 0945, Pridham's jet., ad. w. black inf. + about 3 in tree; in alarm descended to lower level (dense veg.). Nearly, 3 ads. together in barish tree (b+w photo); possibly same gp. / 0957, halfway up Pridham road, to E. saw 3 or 4 ad.; 1 juv. (3?). Ad. groomed ad. / Back at Km. 6, about 12:40, 4 adults low (15'?) in tree where seen earlier, in mod. rain. Some sat in rain w. head low forward, as when down rain ☹. / About 5:30 pm, in patch tall forest 1/2 mi. E. of Kanyawara Forest Stn., saw 1 or 2 groups. An adult came out on bare limb of dead tree high over road, perhaps to look at me. Apparent second group, 300 yds. distant, seen by Roff and counted as 13 (no inds. identified). Blues seem most common here, but red tail present; & hornbills, turacos. We heard calls, gurgling, repeated, about 6 p.m., & there might have been Colobus. (Pridham said ^{common} ~~one~~ call too like). Also many other unidentified calls, possibly some of chimpanzee. / Mr. Muzen reported seeing 2 on ground in short (1 ft.) grass near Kyagawara (Mr. Lake Muechumbe).

27 August 1965. Evening, about km. 6.5, 4 (1 w. black inf.)

250 yds. E. of road nr. top tree w. 1/4 dead branches.

28 August 1965. 0930, at least 4 in tree w. few leaves about 200 yds. SE of corner arboretum nr. K-6 sign on road. Redtails

Colobus abyssinicus


nr Ft Portal, Uganda.

28 August 1965Kibale Forest, nr Kagera Saw Mill,

in trees near there, within 50 yds. / 1135, foot Pridham's road,
 8 in 80' mod. foliated tree. Can almost always see ^{some} in this
 area or across road to E.

29 August 1965. 0900, across road from Pridham's turnoff, ^[= 1.1 E] 5 odo.

(1 or 2 or 3), & 1 Mangabey within 20 yds. closest. / 0925,
 by road about .3 mi. S. of Pridham's jet., ad. ♂ called -
 alone. Throaty low rattling, about 4 "notes" per sec. 5-6
 grating sounds in series; higher than lower tone - perhaps
 middle G or scale. Oft start & end with a "chuck" or
 "cough," giving head jerks then. The la-sal effect may be
 from change position chuck or lips w. continuous vibrating
 sound. First time one seen as called. Mouth opens for call.
 (b + a photo)

/ 0950, mi. 1.9 on road, 5 odo. in trees. at least 2 or 3, one with
 hunk in tail ; & gr. ♀. (A blue monkey in area too.)

1 - 3 September 1965.Semliki Plains
Toro Game Pres., nr. Waso Camp

In evening & morning, saw a heard within 1/4 mile upstream
 from camp. In morning saw 6± in one tree, & 3 in another
 about 1/4 mile distant. / Pridham said that Buschner saw
 from his camp, on W. side of road on the riverine forest,
 downstream from iron bridge. / About noon of Sept. 3, from
 pt. nr. the safari lodge, I saw 4 gps. 3 to 6 and heard
 calls from 5th area. These along riverine forest, &
 visible atop trees from a few hundred yards. Good area
 for study vis. & peripheral contacts.

2 September 1965. Fishing along shore of Lake Albert at
 extreme SE shore, near escarpment & falls, I saw 2 sepa.

Colobus abyss2 September 1965.Lake Albert, Tooro, Uganda

ate groups (6 max.), including 2-3 on rock talus. Trees only 30' tall but good shade cover. Vervets also seen in same area. No white inf. seen.

28 August 1965. About 6:45 p.m. 1 ad. ♂ 100 yds. W. of road
[= m. 0.6] S. Kagera SM

about 50 yds. Then m. mi. 1.0, 5 ad. (1 ♂ + ♀) and 1 redtail ^{at} edge group. / 7:15 p.m., next to road camp (mi. 1.7), 6 (incl. 2 black inf.), still active in dusk. [= m. 0.2]

4 September 1965. About 5 p.m., 100 yds. E. of K-6 sign, in 2 compound leaved trees 60±' tall, 10. Included 7 ads., 2 juvs., 1 one black inf. Fed small fruits or leaves. One mangabey sat quietly in group, other ^(Colobus) within 3' of it at X. Returned 1810 and in same trees saw 6 + mangabey. About 1800, foot of Pridham's road, 10 incl. 2 ♂ + juvs. and no inf. Rain started.

29 August 1965. 6 p.m., rain. On road m. 0.9, 6 w. 2 mangabey 100' distant, sitting in rain. One ate complete leaf. ~~Colobus walked within 3' mangabey but no reaction observed.~~

30 August 1965. 11 a.m., m. mi. 0.9, 6 w. 1 redtail in same tree. Once a Col. walked 3' past redtail, but no overt reactions seen. Col. ate green leaves about 6' from ground (in 60' privately compound leaved tree). at least 2 are ♂ + ♀.

5 September 1965. M. mi. 5.7 in evening in forest, 1 with group redtails (a at edge) in trees. / At about mi. 2.0, a group of 5 ads. - all ♂ + ♀!

Colobus abyssinicus5 September 1965Kibale Forest, Ft. Portal, Toro, Uganda

About 4 p.m. on lower Prithvi's road, 6 ind. 2 juvs. in tree (same as 10 seen 4 Sept.?). / Calling heard from our house at Selitoli in evening (+ next morning).

6 September 1965. In band of 10, at least 2 ad. ♂♂, + 1 white infant, [where?].

Murchison Falls N.P.Uganda

9 September 1965. Warden (Whitman?) said along river banks forests, especially nr. Karuma Falls. / Cutler - ^{8 Sept. 1965} I saw skin in Game Dept. labeled Namole Forest, Kadam, Karumaja - C. a. matschii.

13 September 1965Kibale ForestToro, Uganda

From Selitoli forest station, heard the grating hounds during the moonlight night several times. / 0830, 2 with 2 C. mistitars in 25' tall tree near house. and in 80' tree of mod. dense foliage, 7, w. one in adjacent tree; these 150 yds. S. of house. There 8 ind. - used no juvs., 1 white infant, at least 1 ad. ♂. / 0940, started by car S. on Kagera SM road. Mi. 0.2, 7 or +, including 2 ♂ ad., 1 ♀, 1 juv., 1 black inf. There to E of road; to W., ^(ad. or same?) perhaps sep. gp., including 1 black inf. Proceeded slowly S. 1030, slightly S. of Prithvi's road, mi. 1.1, to W. of road 7 ad. resting in tree w. sparse foliage. There ind. ♂ ad., 3 ♀ ad., ~~no inf. or juv.~~ ⁺ 1 black inf., 1 red tail, 1 red colobus! One gave grating 5/sec. vibration la-sol call repeatedly for 10+ minutes; others in gp. seemed to pay no atten. to it. Apparently the ad. ♂ only called. Redcol. within 6' of Col. at X, but no reaction seen. After a few min. silence, caller started calling again + dashed 50' thru branches as if chasing another, but Mu. inf., red col., + at least 2 others stayed put behind him. / 1110, 200 yds. up Prithvi's road on the S. side, 11 - ind. ad. ♂, ad ♀, 1 juv., + 1 black inf., + 2 red

Colobus abyssinicus13 September 1965.Kibale Forest, Tororo, Uganda

taile, which groomed each other. / Then on S. Mi. 1.4, w. of road, 10, ~~incl~~
 + 1 white inf. (no juvs.) [Counted again about 2 hrs. later; also a
 black inf., at least 3 ad. ♂♂, + 1 ♂ with torn hair on ~~3~~.] / Mi.
 1.8, w. side road, 5 ads. including 2 ♂, 3 ♀; largest ♂ had beils
 in tail $\frac{1}{2}$, as noted 29 Aug. at approx. same site! No inf. or juvs.
 At 1230, mi. 1.7, to W., 6 incl. 1 juv., + 1 black inf. Clouding; 9/10 now.
 Saw no more by Njugata Bridge; drove on to mi. 5.7 + back but
 saw no other Col. gps. Back at mi. 1.1, however, to W. one ad.
 ♂ eating new green leaves on nearly bare tall tree, alone. // 6 p.m.,
 200 yds. up Pritham's road, to S. 11 again (1 a juv.?). Mi. 1.0,
 5 col. ads. (1 ♂ + ♂♂) and 1 blue in tree, blue high at edge in Mark-
hamia (possibly more incl. ♀ w. black inf.).

14 September 1965. 0825, alto-stroter overcast. Near our Abit-
 ali house, 7 + white inf., including at least 2 ad. ♂♂ + 2
 ad. ♀♀. One ♀ took inf. from another ♀ + carried it down tree.
 Big ♂ once dashed 10' toward me in branches (200 yds. dist.) +
 thrust face forward, mouth closed, in apparent threat. Nipples of ♂
 large + conspicuous. In grooming tail, hold up w. hand as
 if heavy. / 0909, K-6, to E., 6 ad + 2 juv + 1 black inf. /
 0920, mi. 1.8, E., 11 ad. + 1 juv. (or ^{black} inf.) + white inf. at least
 3 ad. ♂♂, one with distal $\frac{1}{4}$ tail missing (no tuft). / 1230,
 mi. 2.8, 3 or + ads. in trees. / 1250, mi. 1.45, E., 9 ads.
 w. normal tails, incl. at least 2 ad. ♂♂ + 1 white inf. /
 Mi. 1.2, W., 5 ads. + 1 black inf. + 1 C. raduiz, feeding on leaves
 at 1300. Mi. 0.3, E. side, 7 (1 juv.) + 1 bl. inf. nr. Km. 6
 sign. The juv. w. mother w. inf. / 6 p.m., trees 150 yds. W. of

long v.
photo

♂ threat

Colobus abyssinicus14 September 1965

Kibale Forest, Toro, Uganda

Selitali house, 10 \pm incl. black inf. + 1 C. boduis; sp. spread 100 yds. Feed by grab handful fresh green older-like leaves, bite at bunch in hand w. soil litter, & chew 10 \pm before next bite. Sometimes pull branch to self & eat from held branch. (C. boduis fed same lunch within 6' of C. alys.). 1845, 70' up dead stub 300 yds. W. of Selitali house, well after sunset, 4 ad. + black inf. + 1 red colobus. ~~Colobus~~ Stub 50 yds. W. of where seen morning of ^[=13th] 12th. At 1845, C. boduis bounced up & down on limb, & ad. ♀ (w. large inf. or juv.) left perch for another 10' dist., & C. boduis took place (supplant). Then 6 so in treetop in 3 pairs, larger w. smaller (all juvs?), ^{all} ^{of} larger over back smaller one. The C. boduis left 7 p.m. 2 pairs remained on stub all night - still there 7 a.m. next morning.

15 September 1965. By 8 a.m., only 3 - larger juv. gone. 9/10 overcast & occur sprinkle. The 3 stayed until after 0915. If all one group, spread 200 $^{+}$ yds. at night. Again saw ad. w. white inf. (None this area morning of 16, 17, 18). 10450, E. of K-6, 6 ad. + 1 juv. + 1 black inf.; ads. incl. 2 ♂♂, 2 ♀♀, & one semi-ad. 1010, 0.35 E, 1 lone ad. ♂; concave crown.

1055, .2 up Pridham Rd., 200 yds. SE, 11 spread 150 yds.

16 September 1965. ¹⁴¹⁵ Mi. 2.75, E, 5 ad. + 1 juv. + 1 black inf. ad. ♂ bounded thru branches as if to threat me. | Few seen S. of Nyugata R. along forest road to Mpanga R.; because more closed forest? 1710, 1/4 mi. E. Pridham's house, 1 rested on branch & a C. boduis in same tree 50' distant. 1710, Pridham Rd.



0.2, saw 13 (3 juvs.) incl. ^{ad.} 1 ♂, 4 ♀. ♀ ground ♀ & gr. juv.

sleep

Colobus abyssinicus

16 September 1965 (Tree A?) Kibale Forest, Tororo, Uganda
 Eat new green leaves, about 4" long V. One ♂ w. slightly conc.
 crown, L up lip cut (sneer-face); not largest ♂. 11 735,
 much mount. + feeding. 2 juvs. are ♂♂. B + W photos 7 to 12. 1
 1800, mi. 0.6, 2 ads. in dead tree to E. No rain p.m.

17 Sept. 1965. Thin serious clouds; nr. clear. 0935, mi. 1.1, 1 ad. ♂.
 0950, Pridham Rd. 2, 9 in same 2 trees as last eve, incl.
 3± juvs. L skin one juv. nude anteriorly. Smallest juv. leaped
 tree A to B; grabbed branch broke + fell. Later gr. by ad. ♀. at
 same time in tree C, 100 yds. SW of A, 1 red col. and 1
C. alyps. (1 inf. seen). Probably 2 bands. High in tree B nr.
 trunk, a flattish branch platform where 2-4 often sat.

1025, 4 in B; 9+ inf. in C. 1030, 8
 in B 8 in C. 1055, 10 in B, 8 in C (incl. 2 juv.). Red col.
 sat 3' from ♀ C. alyps. / Tree C, ♀ gr. inf. (gray lumbar). Ad.
 ♂ highest in tree B for long period; slight hunched tail? / 1120,
Accipiter flew close to top tree B + landed 50 yds. distant;
 soon all gone from B, but 9 still in C, resting (so prob.
 sep. gp.), + C. bodius still. / Gray ^{Tree C} backed inf. played w. larger
 juv.; at least, other juv. in gp. / anterior view white area perineum
 of ♂  side . / 1145, single C. bodius to tree 100' E. of tree C.
 + fed on leaves. / Highest in tree C for many min. was ad ♀, sitting alone.
 Another ♀ gr. gray-backed inf. while a yearling (?) ^{dozed} ~~dozed~~ along side. Two were
 sprawled flat on branches, resting. Sunny; 6/10 cumulus. / 1215,
 tree C, occas. desultory eating leaves; 7 visible incl. inf. (or juv.). Some
 sprawl flat on branches, inactive. Clouds 8/10. Evidently inactive mid-
 day. / 1735, mi. 1.25, to W, 6 (1 juv) + 2 C. bodius + 1 red tail.
 Ad. ♂, separate, descended to 15' + stood at ground (at red C?). No info.


Colobus abyssinicus

17 September 1965

Kibale Forest, Toro, Uganda.

in hand; at least one other ad. ♂. Nearly ² redtails dashed recklessly thru trees, & there were 4± C. mitis nearby; possibly big ♂ C. ab. chasing off other spp. at S. end territory. Then he returned alone toward others.

~~1755, mi. 1.45 hr.~~ / about 1800, mi. 1.7, 4 ad. Melchamnia flowers; at least 2 or 3. Band of 12± redtails within 100 yds. Back at 1.35, 1845, 6 ind. 2 juvs. (near where seen earlier; prob. same gp.). Big ♂ dashed 100 yds. S. & then 100 yds. N. thru trees, or if chasing others. / 1900, tree A (& adj. to SE), 7 (1 w. inf.), and in tree C. 4; two others singly, one N. of Prith. Road.

18 September 1965, 0830, still 4 in A, 3 in C, feeding on leaves. Calm, series clouds; Ruwenzori summit visible. One ad. ♀ in A has black scar in white R brow (2 other ♀♀ + juv ♂ in A). Additional 4 in thick green tree (Melchamnia) m. C. So, remain all night in this area; both groups. / 0900, one ♀ 50 NE Prith. road, atop tree, alone (m. 0.2). Of 5 in tree A, one ♂ juv., 2 juvs., 3(?) yrs, 2 ad ♀. Eat fresh light green leaves of tree A. / 0915, tree A, sev'l feeding - 11 seen. Chew each mouthful 10± x. ♀ ad. juv. (1 yr old?). / These gp. includes 3 ad. ♂♂ - hantender , sneery, snagtooth (upper & lower R canine mal-occluded & upper protruding), ad. ♀ w. juv. 1 (a inf.), ♀ scar R brow, ♀ juv. 3 yrs., 2 juv. ♂♂ 2 yrs., + 1 juv ♂ 1 yr.; + ^{1/2 ♀} ~~1/2 ♀~~. Approx. (4 juvs. seen). / 1000, I approached tree A & monkeys then started to jump to tree B, one at a time; photo'd. Still 5 or 6 at tree C incl. Big ♂. Tree B, ♂ (sneery?) juv. ♀ scar R brow; later reverse. / Tree B approx. 5 juvs. incl. yearling. One ♂ rested sprawled prone, legs dangling over

Colobus abyssinicus18 September 1965

Kibale Forest, Toro, Uganda

limb. / 1020, all gone from tree C. Mod. breeze, 2/10 clouds. / Tree B, "snagtooth" gave way when "bartender" ♂ approached. Two dozed in shade leaves in tree B; snagtooth dozed ^{sitting} ~~still~~, doubled forward. / 1700, tree A, gp. of 11 ind. 3 ad. ♂♂. Gradually jumped tree A to B, 2 ad. ♂♂ near last. About 1730, all gone from area. / 1825, 1 adult alone to W. at riv. 1.25.

None seen near Pritham Road 0930.


19 September 1965.

1030, along Elephant Contr. Path, 3, fairly wild, 20-30' up in mod. foliage. Walking toward Mpanga K., 1035, heard the loud gurgling bawls from big sparse-leaved trees. (Reached river 1045.) About 1200, near same spot, heard 2 howling perhaps 100 yds. apart - territorial calls? Muggy day. / 1230, 0.1 on Pritham Road, 3 on road seemingly feeding, perhaps from center grassy strip. Included the "snagtooth" ♂ of usual tree A herd. They dashed through thick herbaceous vegetation + up trees (to N. of road). Others in trees on S. side, including "bartender" ♂. / 1245, tree C, 9 - 2 ad. ♂♂, ♀ w. gray-backed inf., ♀ w. black inf., + 3 more rods. Sprawl on branches; one with all legs dangling. ♀ w. juv. on same branch, 8' from ♂. // 1400, tree C, band of 11 including inf. Of other groups, 4 juvs. only stayed together in tree, following each other playfully (no contact seen). 2-3 x more in next hour I saw these together, without others (one about 1 yr; 3 2-3 yrs.; one of larger ♀). / The 11 incl. juv. est. 1 + 2 yrs. old. / One ad. ♂ in tree held rear toward another + turned head back toward it to side, possibly smacking legs; then walked away (presenting?). / 1425, tree C, of 10, 1 inf., 2 or 3 2-3 yrs. juvs. Also one redtail within 8' of some; later

Colobus abyssinicus19 September 1965Ribale Forest, Torq, Uganda

it sat 10'± lower than Colobus. Colobus calls 1/2 mile to E; the monkeys looked toward, & one rose. | 1509, 0.1 mi. on Pritham Rd., the 4 imm. again in one small (30') tree, the rest of band not present. | Ad. ♂ or juv. ad. ♂ in tree C; then both lay on side on branch in hot sun. By 1520, three red tails in same big tree w. the Colobus. Hot & muggy. Start rain about 1700. | Mezzan said monkeys ^{again} near road camp after absence several days. [≈ 0.85]

20 September 1965. 0839 tree C near Pritham's Road, 6+, but

none in trees A, B. Calm; 4/10 alto cumulus. Those in C resting 1/4 way from top. | 0859, mi. 1.15, 10 ays. w., at least 3. | 0945, mi. 1.28 w., one adult ♂ in Meriania ^h top. | 1010, 6± in 30' trees ^{to E.} just S. of road camp (0.9 mi.), 4 6 or + across road in Meriania + adj. trees. I identified "snag tooth" & saw two juvs, so doubtless band of tree A. They fed on, one on flower buds (or fruit tassels) . | 1110, 0.5 mi. up Pritham Road, one ♂ in 40' tree; dashed about vigorously; = "bartender"? | 1030, none in trees A, B, but 6 or + in tree near tree "C", assumed the C group. | 1300, mi. 0.8, three in tall stub at edge tree in marshy area; adult ♂ included. | 1310, tree A, one ♂ - perhaps "bartender." Calm, muggy; 8/10 overcast. | 1615, mi. 1.15 E, 7 (5 ♂ 2 ♀) ads. Fed on tiny new leaves of 60' tree w. little foliage (across from Pritham Rd. entrance). Why so many ♂ ♂, & no juvs? Spaced out - at least 10' from each other. about 150 yds. from the 7, mi. 1.1 w., adult ♂ (2 seen here at times). | 1 of 7, ♀ walked 6' from ♂, but no interactions. Overcast; rain & wind. | 1800, 3 in trees near E. edge tea field, about

Colobus abyssinicus20 September 1965.Kibale Forest, Toro, Uganda

0.25 on S. side Prid. Rd. (100 yds. NW of tree C). But none in trees A, B, C. / after showers, 1800, still 3 there + none in A, B, C. 1825, at least 5 ads. in 3 trees to E. of mi. 1.15 (prob. the same) the closest 8' apart, 10 to 20' from tops tree having little leaf cover. And still an ad. ♂ 40' up ^(tiny) fine new-leaved tree at 0.5 on Pridham Rd. Overcast + drizzling. 1850, still 2 or + at foot tea field, near 0.25 Pn. Rd. (the usual "tree C" group?).

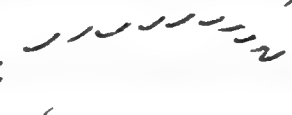
21 September 1965. In morning, 0800, the 3 still there. / 0920,

Pridham Rd. 0.5, 2 ad. ♂ (crouching) in barish tiny new leaved tree. When approached, they dashed to another tree, then descended to ground, crashed through brush + herbs, + ascended short dist. up stouter more foliated tree (photoed in first). / The group of 7 adults still to E. of mi. 1.1, same tree as yesterday, eating tiny leaves (simple alt., leaves folded, pinnate veins, hang down both sides branch ∇ x-sect.). There 0935. / 0940, mi. 1.2 to W., 5 ad. + black inf. One descended to 15' to feed on Marlehamia flowers. Apparently; mother w. inf., 2 other ad. ♀♀, 2 juv. ♂♂ 2-3 yrs., Big ♂, semiad. ♂, one redtail in same tree. / Heard the grating calls, ~~where~~ about 1/4 mile to E of mi. 1.2. Alto struts; calm. / 1010, mother w. held inf. stayed 100±' from others, in crown umbrella tree. A C. bodius in same tree came to 6' from her + stayed 10±' min.; then departed to S. / 1100, across ^(highway) road to N. of Sawmill, saw 3 ads. and 3 redtails 50± yds. from road in shrub + small tree vegetation. Once a redtail started out branch toward Colobus, + latter dashed at it + it retreated.

C. bodius

Colobus abyssinicus21 September 1965Kibale Forest, Toro, Uganda

About 80 yds. E. of them, 7 more (1 juv.); all same band? Nearly saw 5± C. bodius within 100' of abyssinicus. These in forest to N. of highway & adjacent to it. They ate whole fresh green leaves, Melastoma size & shape (opposite, simple, crinkly). One ad. in barish tree lit & pulled off short leaf sprouts from trunk. 7 spread 100 yds. or above 7 w. juv. in one tree (photo; skyline). / 1225, mi. 1.1 on Samnail Rd., 2 ad. to E. and 3 to W. in trees. / 1600, Prith. Rd. 0.25, 50 yds. to S., 6 at ad., + black inf. carried (tree C group?). Incl. juv. 2-3 yrs. None in trees A, B, C. / 1625, mi. 1.3 W., 10± incl. juv. Descended tree on if alarmed. / 1830, 1.9 E., lone ad. or in tree. Another lone ad. or at mi. 1.6 W.

22 September 1965. 1/10 cloudy; clear, calm. Walked trail at NE corner of tea field & saw ⁰⁸¹⁵ 5 (+ one inf.) in ^{tiny} tree tops near ^{less or} stream. Few dead trees here. (C. bodius seen yesterday in barish tree in vicinity). / 0910, Pritham Rd. .05, 2 ad. or 40' up, together (to 3'). One descended when we were 200 yds. distant (same 2, doubtless). / Mi. 1.35 W., single or ad. looked thru tree (same as before here?). / Mi. 1.2, gurgled calls to E 1/4 mi., up to 13 in succession, rising in pitch, then descending:  / 1000, .05 Prith. Rd., or top fine new lod. tree to W. None in trees A, B, C, but 4+ to S. of 0.25 (as earlier). Rain at 1 p.m.

23 September 1965. Mod. foggy; stratus, calm. 0755, on trail to creek at NE corner Pritham's tea field, 5± mixed ^{with} 10± C. bodius in scrambling thru leafy trees. Jumps shorter, starting farther out & ending shorter than C. bodius. Saw 1 carried ^(E. ab.) infant. In jumping same C. bodius got, start farther back & end farther in than C. abyss., jumping higher & with greater abandon. 0810, 12 or 13 at top of mod. foliated 100 ft. tree (simple leaves, 4"), including inf. and 1 or + juvs., 100 yds.

Colobus abyssinicus23 September 1965Kibale Forest, Torq, Uganda

0840, Pridham Rd. .05 W., ad. ♂ 40' up, + redtail 100' away from him. The colobus (coloured?) to 6' from redtail + sat peacefully in thin foliated tree.

0850, mi. 1.2 E., 7 ads. lashed in 50' tree (prob. the 5 ♂ 2 ♀ gp.). Resting, sprawling. I walked S. 0845 from mi. 1.2. 0905, 7 (1 large juv.) in

walk
census
1.1 → 2.1

bare tree top 50 yds. W. of road at mi. 1.4. ⁰⁹¹⁵ 1015, mi. 1.55 W., one adult 100 yds. W. 0940, turned back N. at K-B. At last plainly brightening, overcast.

1005, 1.53^{W.}, 2 ad. ♂ in Marikhamia + adj. 80' tree; one dashed off 50 yds. + other soon followed. 1020, the 7 still at 1.2 E. There all colobus seen in

census walk 1.1 to 2.1 + return, the also saw 1 and ¹⁺ 5 ± redtails in walk.

1030, Pridham Road, saw ^{some} ^{there} at A, B, C or elsewhere. // 1200, in area of 2 ad. ♂ to W. of mi. 1.1, ad. ♂, ♀, juv. ♂, ♀ w. black inf. // 1220,

the 7 still at 1.2 E. Occas. sunbursts; 9/10 cloudy. // 1240, adult apparently chasing (following?) another ad. near C.1 E. on Pridham Road.

At 1 pm one ♂ there. It descended when I to 40 yds. from tree. Hot,

calm, bright. // 1400, at least 4 ads. at 1.2 E. where 7 had been; all in shade in ^{well} foliated tree + quiet. The 1.1 W. heterosepals gp. present or

augmented; apparently 4 ad. ♀♀. And across road, E. of O.T., 2 ad. ♂♂, prob. usual ones. // 1625, ^{1.1 E} O.T., one ad. ♂ in tree. 1.1 W. several.

1.21 E., 6 ads. seen. Rain showers then. I saw 2 in near bare tree (fine new foliage) at forest edge of Pridham's tea field, 200 yds NE house.

Later C. ladicus in this tree. // 1800, sweeping forest top 1 to 3 miles SE of Pridham's house, I saw gpos. of 4, 1, 6, 1, + 1. Then after sunset + clearly identifiable at long range.


24 September 1965. 0745, from Pridham's house, saw ^{some} ~~some~~ in well leaved taller trees at edge forest at N. edge tea field, 300 yds. NE of house.

at least 4, incl. adult w. black inf. // 0815, drove S. on road. Mi.

1.4 ^{W.} ~~W.~~, +.2, at least 5 (where 7 yesterday morn). 0830, E. of 5.7, heard the


Colobus abyssinicus24 September 1965Kibale Forest, Toro, Uganda

gurgling howls of one sex. / 1100, edge forest at NE corner Pridham's tea field, 2 ad. ♂, 2 ads., juv., + inf. (= 6) resting on high branches. In alarm at me, ♀ w. inf. away, but 3 ads. stayed sev'l min. / 0815, mi. + 4^w, 5 or + (when 7 seen yesterday morn). 0830, mi 55, last gurgling howls 1/2 mi. SE. / 1100, edge forest NE corner Pridham's tea field (start of "chip path"), 2 ad. ♂♂, 2 more ads., juv., ll. inf. (= 6 or +). When I to 50 yds., ♀ away w. inf., but 3 ads. stayed. Then I saw 5^{or 2?} in tree 50 yds. E. of there, + latter gp. moved E. (all one gp.?). This second gp. 2 big 3 juvs. (at least one ♂), + ? Big ♀ came concave in front view. About 5 yds. to W., a band of 5⁺ C. bodinus thru trees at lower level. / 1215, mi. 1.2 E., 7 adults as before, resting in shade in well-leaved tree. Approached, crossed to other tree, then down to bushes + away, but some climbed up 20' after 50' yds. Left singly, widely spaced. Understory much nettles to 6' tall. This band very constant location. Feeding had been in sparse new-leaved Celtis trees.

25 September 1965. Walking S. on road from 1.0 starting 0835, 5 or + ads. at 1.2 E., 5 or + at 1.45 W., 5 ads. at 1.97 E (when last seen). These last included link-tailed ♂ , same as prev. seen at 1.4? In Celtis tree 40' tall. [Back at?]. Set at 1.45 W. 7 (incl. 2

juvs.) + 1 C. bodinus. 1040, 1.1 W., 5 ads. + juv.; same at Celtis.

Pridh. Rd. 1.3, 150 yds. N., 9 + inf., incl. 2 ♂♂, 2 ♀♀, 2 juvs.

One, tail down but rear → another, turned head back to side + opened + closed mouth sev'l x, as if in equivalent of presenting + lip smack. Then walked away. / In census walk about 1710 saw gp. 6 or + at Prid. Rd. 0.5 W., as before. and gp. 7 ads., prob. 1.2 E gp., at 1.95 E. Also usual gp. about 7 at 1.48 W., 4 5 ads at 1.97 E. One of last "hinky" adult  ♂. Kisti said he + another originally both croaking,

link
tail

presenting?

C. abyssinicus25 September 1965Kibale Forest, Torq Uganda.

in separate trees, + crooked even louder when moving thru trees. Sometimes one seemed to give the 'chump' + other the croak. Not seen to chase each other or others. At 6 This gp. 2000 3 ♀♀; fed in Celtis.

26 September 1965. 0815, from Budham house, 3 about 500 yds.

NE in forest nr. corner tea field, high in sparse foliage. | about 200 yds.

N. of tea field, in Budham's N. corner forest, saw 7 in top tree (Mank-hannia w/o flowers?); included small + larger juvs, apparently 2000, + 3 ♀♀ ads. Usual gp. of this corner area? | 0930, 9/100 to struts, ^{stop ads. Macrospira} calm. None in trees A, B, C nr. Budham's road. But 2 in Shana to E.

of 10 on same road (1 or both ♂). 0950, 1.1E, 4 or + ads. (the usual 1.2E. 7?). 1000, 92W, 6 or + incl. ♂, ♀, 2 juvs. (larger + smaller both ♂♂; these the tree "A" gp. probably, as I saw the ♀ w. black scar in R. brow. In 10-15' Trama and other small trees betw. road + larger trees. Later 6 at once in near bare Celtis, eating small green leaves; pull branch to mouth + bite off leaves. | 1045, mi. + ⁴ 1.44 W., 5 or + incl. 2 juvs, + one C. bodius (always one w. the gp. of 7 here?). Mostly in Celtis, the Carapa adjoins. 1.68E, one adult. | 1725, 1.68W., 4 or + in area w. 5 redtails, 1 C. bodius, 1 C. mitis. 1735, 1.95E, usual 5 ads, including black-tailed ♂. | 1745, 2.65 ^{E.} W., in trees on hill, 4 ads, + white infant.

27 September 1965. 0820, mi. 1.0 W. in tree edge forest in open near road, the "A" band including "snagtooth" ad. ♂, near R. brow + This gp. 13; 3 ad ♂, 2 subad. ♂♂, 5 ad. ♀, 3 juvs. (♂, ♀, ?).

Ad. gv. juv. ♀; ad. left; juv. to her + again groomed. "Snagtooth" + near brow + ^{at together} on bare top of tree. | 0900, 1.1E, 6 ads.

spread 80 yds.; incl. 2 ♀♀; probably the 1.2 E usual 7. | 0910,

no sharp
response

Colobus abyssinicus27 September 1965.Kibale Forest, Toro, Uganda.(photo 3 CA
1 CB in tree)

1.33 E., 4 or + in 100' larish Balanite tree, where rarely seen; wary, & retreated when I was ¹⁰⁰ yds from tree. 11.35 W., 4 (at least ¹ ad. + ¹ juv.) in trees near C. boduie. One sat 3' from boduie. C. a. coughed w. tongue out, ^{making} "razzberry" sound. 10.30, 1.4 W., 1 ad. ♂ rested atop tree (where sometimes gp. of 7). 1.7 E, ♂ eating Markhamia flower buds. 11.030, sev'l of band "A" at 1.0 W, + 2 C. boduie in same tree. Subtle, but prob. retreat slightly from boduie. 11.00, Prith. Rd. ^{0.1} to E. in well foliated (Olea?) tree, 6 + 2 infs. And (Not part band A??). ^{Pr. Rd.} 2 N., 7 incl. 2 juvs. (1 ♂ ad, 3 ♀ ads. ident.; 1 juv. w. ad. ♀) in Celtis & Markhamia. Ad. ♀ & juv. ad. ♀ / 1600, 10+ in same tree as seen & photoed this morning, 1.0 W. / In census also saw gp. at 1.1 E (5 ad.); 1.37 E (5 incl juv.) ♀; 1.95 E (5 ad.) (at 1.37 E, 5 were seen in morn. with C. boduie). / at 1.13 E, 5 ads., & seemed to eat spherical fruits of (Coffea?).

28 September 1965. Band of "A" at about same place as yesterday morning, 1.0 W. Also 7 ads. to E. of 1.1 as usual. Overcast; showers 11 a.m. 10.15, 2 in area of 3 C. boduie in forest nr. Pritham's NE corner. 10.55, to K-6 (mi. 0.3) area & saw gp. of 11 in partly bare tree 150 yds. E. Included 3 infs. (held by mothers; grayish lower back), 2 ad. ♂♂, 4 ad. ♀♀ (3 with infs.), subad. ♂, juv. ^{juv.} 3 ♀ (with ♀ w. inf.). 2 ♀♀ together; one took (or was given) inf. held by other, & no further interaction betw. ads. All within 20' dist on same big open level. One inf. (1 yr.?) to Mother holding inf. & pawed her inf., then sat calmly alongside. Ad. ♀ to ♀ w. inf.

2
♀
1 subad. ♂
13 ♀
3 inf.
11

Colobus abyssinicus

28

27 September 1965Kibale Forest, Toro, Uganda

and latter gr. first. Ad. ♂ desc. limb 6' to 2' from ♀; his penis (flesh color) was erect for 5⁺ sec. Juv. 3 (yr. - est.) to ad. ♀ and groomed her; then reverse. Two inf. wrestled + lit playfully, rhesus-like. Ad. ♂ gr. ♀ briefly. Other ad. ♂ sat quietly 1' from ♀ w. inf. ♀ + groom inf. much. ♀ gr. ad ♂, which then lay prone. ♀ w. inf. 6' to another ♀ and groomed her. Time of resting + grooming; no feeding. A few raindrops 1015. ♀ to ad. ♂, which crouched + she groomed him. (Apparent chirp cries 1/2 mile E; no react. Colobus.) Juv. (2-yr.) held ~~some~~ inf. rear betw. his knees or gl in mounting. (Imm. = 3 inf., juv. 2, juv. 3 ♀, subad. ♂.) Carla K. saw C. bodensis ascend tree; C. alys. looked nervously toward it (but I approaching in grass). C. b. sat 1' from a C. a., which soon moved up; C. b. moved up too, + after a couple of moves sat in former place of the C. alys. Probable example giving way to C. bod. | 1400, 100 yds. W. of Pridham's NE corner, 4 ads. + 2 inf., with 3 C. bodensis in same tree. 100 yds. E. of corner, 5 (1 juv.; 3 yr juv. ♂) ^{incl. ad. ♀,} in small-leaved Celtis. 1500, usual 7 ads. at 1.2 E. | 1505, 1.4 E., 4 + inf. (ad. ♂, subad ♀, ad. ♀, ♀ w. inf.), and at least 3 C. bodensis within 200 ft. Rain showers. | 1735, 100 yds. E. of Pridham's Road 0.1, 12⁺ incl. juvs. eating leaves vig. noisily; apparently band "A" (=13). In Celtis and Olea (thick foliage; eat?). | 1740[±], 1.2 E gp. 5 ads. eating new Celtis leaves. 1.35 E., ♂, 3 ♀, 1 inf. again. 1.95 E., usual 5 ads. (w. - hunk tail ♂) in 3 trees, spread 80 yds. - constant location. 2.2 E., 5 ads. + inf. at site (mostly Celtis) where group

Colobus abyssinicus28 September 1965Kitsale Forest, Toró, Uganda

of C. bodius seen in eve a few days ago. 1.85 E., 5 (w. juv.) + inf. Then about 1845.

29 September 1965 alto stratus overcast, calm. Saw no monkeys

from Bridham's House. Walked forest edge to Chimp Path, N. to creek, & saw but 1, heard 1. But 10± (prob. "A") in area E. of P.R. 0.1 (saw & near R brow). | 1.22 E., 5 ads. in 2 trees (usual 5) sat quietly; ♂ sat close behind & w. hand on her shoulder for 10+ sec. 1.25 W., 3 out in 50' Markhamia. 7.15 W. About 12 m., usual band A. nr. 0.1 on Bridham Rd.

Disturbed by photographer's approach. One reached up and struck another above. Then one of tamest groups, & lately fairly constant this site in Celtis, Olea, & Markhamia; visible from Kagera Rd. too at 1.0 W. | 1645 & again an hour later, lone ad. ♂ 1.3 W. in Markhamia tree (some C. bodius within 50 yds.). The usual 5 ads. at 1.2 + 1.95 E. 1.2 OE., 7 ads. (usual), all in one 40' tall Markhamia w. few flowers.

30 September 1965. Thincervus boyce. P. Rd. 1 E., large

gp. in Olea (= A). Mi. 0.4 W., Kagera 5 m. rd., 7 ads. + the gray inf., as seen last eve (inf. black brown, & faceys, but most back & tail gray-white). Inf. sawet. 2' from mother, appar. feeding self, in Celtis tree with small leaves + flowers. | See C. bodius notes on inter-admixture species. | K-6, none about 1030. But usual 5 ads. at 1.95 E (3 in well-leaved Celtis). | Area Njugata bridge, rarely seen tho many Celtis & Markhamia present. Perhaps big trees too isolated for easy jumps between?

Colobus abyssinicus30 September 1965.

Kibale Forest, Toro, Uganda

1650, 1.1 E, 7 ad. ^(1.2 E band) as usual; some in coffee (?) trees, which bear 15 mm fruits. Back at 0.4 W, saw 7 ad. again, same place; 1 grey inf., and one ad. C. badius same place as some.

1 October 1965.TO: Toro Game Preserve, Wasa R., Toro, Uganda
(E.)

Arrived at old Bushner camp $\frac{1}{2}$ mile downstream from Wasa R. bridge about 2 p.m. Saw 5 \pm in trees 100 yds. from camp. Across river to N., 6 \pm in trees nr. river. From Wasa Camp, $\frac{1}{4}$ mile above bridge, saw 6 ad. in tree across river, to ^{E.} W., resting. / Conspicuously longer white hair on back + tail than at Kibale, & tail tuft cleaner white, so white more conspicuous. Mixed shrubs + trees along river in irregular belt often $\frac{1}{4}$ mile wide; few trees over 80 ft. / 1640,


- A 150 yds. ^{SS NE} W. of camp, 9 (2 juvs) in top + side fresh-green mod. leaved (semidecid. alt. deciduous) tree. Walked upstream; 1713, $\frac{1}{4}$ mile ^{E. W.} W. camp on ^{S.} N. side river diam.
- B (along large \sqrt{f} tree, 3 ads. There in isolated patch 100 yds. ^{Sp. B} diam.; to leave must cross 100' min. of grass, to ^{E. W.} W. Tail tufts conspic., espec. when run. + 805, ("Sp. C") ^{E.} (others, 8 + inf.)
- C 200 yds. ^{NW} of camp in top fine new-leaved tree, many - Kristi counted 14 max. - feeding. "Sp. A" gone, but 3 in ^{"Sp. A"} big-leaved tree 50 yds. ^{E.} W. of site.
- At 1805, bark heard, + gp. 9 Papio seen in large big-leaved tree 100 yds. ^{SE} NW of camp, within 50 yds. of where Colobus seen earlier.

2 October 1965. 0200, gurgle bands of Colobus from 2 or 3 sites in area bands A and C; apparently 2 banded from area of C. also Papio bark, which perhaps started the Colobus. (Disturbance calls?). Similar to Alouatta, in night howling at disturbance. / 0700, ^{groups} bands C and A' still in trees, tho I saw only C at former (3 latter). Long drizzly rain then. The gurgling calls heard about 0630. These gps. still present 0900, as rain continued. / 1110, I saw one ad. on thick branch of tree on S. bank, 200 yds. downstream from opposite camp. Band "C" (8 ads. + grey inf.)

Colobus abyssinicus

2 October 1965

Toro Game Preserve, Toro Uganda

in same tree as before (inf. to 1' from mother). / Went to area .2 mi. S. of
game lodge (about 1.5 mi. S. of bridge) + searched for warblers where can
overlook treetops. Atop W. bank in tree, saw 3 ods. about 250
yds. S. of these, 3 in top green round-topped tree, + 2 ods. 200 yds.
S. of these in dead topped tree + another 200 \pm yds. farther S. There
about noon; hot, heat wavy. Using binocs + telescope to sweep tops
trees from top of E. bank, where can see $\frac{1}{2}$ mile or + of forest along stream.
/ Back at camp, tree where band C was much had sample alt. leaves.
3" long, digitate veins . Walked in these woods $\frac{1}{4}$ mile E. + back,
but visibility short tho walking on elephant paths easy. / The
clump here across R. from Waca Camp still had gp. 1650, incl. juv.;
this clump about 75 yds. wide, then animals would have to go thru ^{grass!} ~~grass~~
Probably closest ^{gp.} to bridge to 5. Area of "B" prob. closest gp. N. of bridge
(1 seen there eve), the two about $\frac{3}{4}$ mile apart. / Rain.

3 October 1965. Alto-cu-strat. clouds. Monkeys at tree C, A,
and m. B. Counted up to 10 (+ing.) at C; by 0800 there had moved
100 yds. E. in trees. A band of 20+ Papio spent night within 200⁺ yds. of
the C. a. in trees. Both ^{ssp.} callicercus. at night. | 10 a.m., from near
lodge saw 1 or 2 in one tree only. Calm, muggy, 8/10 overcast. At
1155, 2 or 3 still in tree B, only about 5 yds. down. | Returned to near
lodge 1700 & surveyed forest. Saw gps. of 4 (1 juv.), 4 (1 juv.), 4 (1 juv.)
1, & heard one other. Closest gps. about 250 yds. apart. Thick fol-
iage most trees so counts difficult.

4 October 1965. Cu-stroke overcast. About 0700, 5 or + in tree 100 yds
NE
W. of tree C, top of high rounded tree. 3 or + near tree B. 10900, surveyed
1/4 mile S of game lodge. Saw gp. of 4 or + (2 juvs.) and similar

Colobus abyssinicus

4 October 1965

Toro Game Preserve, Toro Uganda

gpr. 300 yds. S.; other gpr. of 2 and 3 at. Moved farther S. to watch. Saw in dead tree gpr. of 8 (1 a juv. - 1) + inf. (prob. complete gpr.), sitting, lying, grooming; at least 1 ad. ♂, prob. 2. Heard the rattling call + then another one from 1/4 mile distant; then both - could be territorial warning, the monkeys show no excitement at it. | Bunch of Papio to 150 yds. from, in trees, & occas. barks. | The 8 bunched in 20' diam. in same tree. a redbell (C. mit.) within 50 yds. | 1025, another gpr., 1/2 mi. S. lodge, 7 or 8, feeding in their foliage in center river forest band. Muggy, warm; alto cu strat. clouds, but no rain morning. | 1500, returned to area S. of lodge + searched river



5 October 1965. 7 A.M., 8⁺ in tree A', 200 yds. SSE of camp, incl. 2


juv. + 1 inf. (seen there last eve too). And in top of big round topped tree at B (500 yds. S. camp), 5, only the tails showing, all in an even line as if on one limb (1 juv.). Last eve also 2 or 3 in tree top C. side tree for monkeys. Saw gpr. of 4 (juv. = 1), 5, 9 (2 juv.), 8 (3 juv. + inf.), 9 - the 9 + 8 about 200' apart, possibly same gpr., about 1/2 mile S. of lodge. The 9 + 5 about 300 yds. apart. Good visibility after showers. Black & white hornbills often on tree tops & at first taken for monkeys. Fish eagle flew slowly over stream.

5 October 1965. } Overcast & threatening, but only a few drops.


0900, area S. of lodge surveying tree tops N to S. About .2 mi. S. lodge, to W., 5 (2-3 juvs. played, wrestled, dangled from limb, wrestling, until dropped into foliage), 5 + juv. 1, 3, 6, 3, ⁴β, 7 - all there in about .4 mi. distance along river. Moved to .5 S. of lodge, where gpr. 9 + 8 last eve; none in same tree, but 100 yds. N. in dead tree counted 11, apparently no inf. + perhaps no small juvs. a gpr. of 4 at 500⁺

Colobus abyssinicus5 October 1965.Toro Game Preserve, Toro, Uganda.

100 yds. farther S. (Forest then thinned to S). Warm, calm, 8/10 overcast. As sky brightens, monkeys descend into foliage, mostly out of sight. (Ad. + juv. C. aethiops, top one foliated 80'± tree, visible ^{on} top of rounded crown, tho no other spp. seen in tree.) | About 1/2 mile S. of Waza Camp, walked to E. side river, where trees somewhat spaced, & saw 6 (incl. 1 inf., 1 juv.) ¹⁰³⁰ in small tree; not always tallest, widest, or tree, & rarely most foliated. | Then directly opposite Waza camp, saw none in usual small clumps (leave?). | 1120, nr. camp, 2 played by tree B. and 2 there 1500 (1 juv.). [Photographed tree A, B, C'.] Only 5/10 overcast; wind 5 kts. | 1700, ^{saw 9} about 7 ascended 60' new-foliated tree at edge grass 100 yds. S. of our camp & fed (leaves smooth, , about 4x1", simple & alt.) (some small flowers  too). Incl. 2 juv. + 1 sp. + juvs. (2 about 1 yr.) and subad. ♂, no inf. I approached slowly afoot, & 1-2 at x they descended & jumped or dropped down into bushes, 2 juvs. first, an adult last. One big ♂ came to close branch & faced me as if in threat. All gone when I about 60 yds. dist. | None seen in tree B, but at 1540 about 9 (+ gray inf.) in top of tree C, where foliage sparse. | Heard none at night from camp.

6 October 1965. 0700, 2 or + in tree B, seen in tree A' (mod heavy foliage; simple large dull leaves - the most consistently used roost tree, tho small), and 9 in top of C - seen still there at 1000, & I collected sample lvs. + fruit. (Round green fruits 5 mm diam; leaf veins  rather digitate; pale bark somewhat scaly, lenticled trunk, no epudate.) Many

Colobus abyssinicus6 October 1968Toro Game Preserve, Toro, Uganda

droppings (balls) under tree, which used both for roost & feeding. Prob. eat fruits or tiny flowers. Tree only 40' tall, or less. | Stopped at upper game camp, about mile 5, & was told same in large adjacent Wera R. valley, tho aspect rather ^{driv} ~~dry~~ than near game lodge. I saw one also; good view of crans from above. | Back in Kibale Forest, large gp. ~~(1500 and cabin)~~ (1400 + 1700) in tree A, where not seen for long. Counted 9 (3 juvs. 2-3 yrs., 3 ad. ♂♂, 3 ad. ♀♀, ^{+ one lone w} ~~no~~ inf.). Biggest ♂ had slanting scar over L eye, medial . Then ate the Celtis leaves.

One gr. ♀ w. inf. Juv. gr. adult, & reverse. Inf. ate same leaves or held to mother (rump grayish, ^{hair} ~~hair~~ not elongated.)

About 1730, mi. 0.4 W., 7 incl. ♂ and gray inf. (prob. same gp. or seen late Sept.), but 50 yds. N. a gp. of 4 large ods. (3 or all ♂♂). | From K-6 on road, saw 7 (incl. 2 small juvs.) 200 yds. S. (poor view). 1840, tree A, only the scar-brow ♂, but several more in tree A, 100 yds. to SE, where foliage sparse. | About 1800, 1.55 W., 2 ad. ♂♂ dashed thru trees, 40' up, S. to N., 5-10 yds. apart; not of a group? | Me. 1.45 E., could find none. But back at mi. 1.5 E., I saw the ^(?) stump-tailed adult ♂ alone in near bare tree (possibly others near). | at 1.4 E., 5 (incl. a juv.-1), & at 1.4 W., 7 (2 juvs.). Usual gps.?

7 October 1965. From Pridham's house, 0800, ^{4 at} 3 in tree A" where seen last evening; same at 1130. | 0800, 3 in near bare tree nr. Pridham's NE corner (tea). | Mr. J.A. Lemon told Pridham that C.a. was eating his eucalyptus trees.

Colobus abyssinicus

7 October 1965

Kibale Forest, Toro, Uganda

1555, tree A on Pridham's road, 9 (+ inf.), largest ♂ with scar over l. eye. He came to close side tree + faced us as if threatening. One gave tiny lobs of head; jerks; like rhesus threat but much less mov't. Some eating Celtis leaves. / 1625, N. of highway, 200 yds. E. of sawmill, 5 CA ados. in one Marchauxia tree, apparently eating leaves or buds. / 1700, 0.6 mi. on sawmill road, W. side, gp. of 10±, w. 1 or + juv., 1 or + inf., 1 or + ad. ♂ (usual. + gp.?). Light rain; drove S. / 1.35 ^{W. E.} E., 4 ad + juv. 1 (or int.), appear same gp. as seen before here. 1.35 W., a gp. of 8± near tree where 5± C. bodinus, + one ad. to same tree. Shower. (the 1.4 W. gp. of 7?). / 1.75 ^{W. E.} W., single ad. ♂ in tree. / 1.95 W., kink-tail ♂ + 3 other ados. (another present?), eating Celtis leaves avidly. First time seen on W. side road here! No more to K-8 sign, so returned N. In same tree W. 4 at 1.35 E., about 3 redtails. 1.35 W., one or more in big Balanite, where C. bodinus seen shot x ago.

8 October 1965. 1700, 3/10 cumulus, calm. Along Pridham's road, in tree A, 2 or + juvs. in gp., probably the 9 (scar l. eye ♂). None seen to K-6 + back S. 1745, 1.36 E., 3 (or 4) ados. + juv. 1 (usual here). 1.45 E., 9 + 2 white infos. and 1 black big inf.; 3 ♂♂ including "stamp tail" - he came closest to us, as if in threat. One white inf. all white hair, silky + wavy, + pink skin showing at throat; prob. born recently. One redtail same tree as one, + a C. bodinus to 6' from one. / 1815, 1.55 W., 7 or + incl. 2 or + juvs., 2 or + ad. ♂♂. The ♂♂ hurried off to S., leaving 3 ad. in first Celtis tree, while others incl. juvs. to N. (prob. the 1.4 W. gp. of ^{7 or +} ~~7 or +~~ a wary bunch). / 1850, still gp. in tree A + vicinity, Pridham's Rd.

gp. not
seen for
long x

Colobus abyssinicus

9
8 October 1965. Kibale Forest, Toro, Uganda

About 10 a.m. I walked from house to 1.5 on ^{savannah} road & back. Sp. of 9+ in tree A and adjacent. As I passed at 150 yds., ad. ♂ came 50' toward me in tree & sat crunched facing me, head low - possibly unerect penis is displayed in this posit. Later some sat in rain in open on high branches. When kids ascended tree house to watch, gp. retreated to adj. tree on far (SE) side of A. 1.1 E., I saw 4 + ads, probably the 1.2 gp. of 7. 1.35 E., 3 (n +) ads. + juv. 1 (n ad. inf.); prob. usual 4. and at 1.25 W., 3 or + ads. (= ?). In gp. A area, Rolf counted 7 ads., 2 juvs., 1 big infant (= 10). About 2 hrs. after ascended tree (0930), some adults returned to tree A and fed; 5 ads. in A while juvs. & inf. played in first tree, but finally came to A. Rain midday & afternoon.

10 October 1965. Vicinity Osera River in Kibale Forest, on road S. of Kigarama to Biyodi. About 2.5 miles forest along road; about 90'; no recent cutting, poisoning, & can walk about in forest fairly well. Dark, trees close, & few dead compared to Kogera savannah area. Saw no Colobus in 2 hours driving up & down road, & walking, midday (redtails present; heard chimps). In forest patch .3 to 1.4 mi. S. of Kanyawara ranger house, at least 2 bands of 7+ along road. Wary; flee fast at approx. to 50 yds. of tree. In one gp., 7 in succession followed same route ^{at} fairly regular intervals of $\frac{1}{4}$ to $\frac{1}{2}$ min. Jumped 12' gap, crossing about 100' above roadbed, landing in resilient mod-foliated branch. No cutting or poisoning here; ~~the~~ understory woody & ^{mostly} passable.

11 October 1965. Rolf & Kisti watched gp. of 9 from tree house; in tree A & vicinity. Saw 9+ infant ♂. A large juv. ♂ play-wrestled w. biggest ♂. One ♀ appeared to be pregnant. Still in these trees at 12 M. / 1030, 1.13 E., 2 n + ads. feeding Celtis; pull twigs to mouth. 10⁵⁵, 10⁵⁵,

Colobus abyssinicus

11 October 1965

Kibale Forest, Tororo Uganda

1.7 W., 5 ads. + big juv., resting ^{Celtis} in trees, 3 in close bunch. / Rolf + Kieck reported: at first monkey hidden, but soon came into sparse-leaved Celtis (tree A), where fed, jumped about. Soon went E. 100' into tree B (reached by jump). In that tree 2 ♂♂, one smaller than other; "scar" = subad ♂, "1 eye" ♂, the largest & apparent dominant one, ^{came later; when} ~~stayed first~~ he arrived tree B, another ad. ♂ to him & groomed. Once adult ♀ chased subad. ♂ out on branch. "Scar ♂" rested, lying on branch; juv. ♂ (smallest juv. - about 1-2 yr) to him, pulled at his ears & head, & soon ad. ♂ up, & both in play fight, nuzzling w. bared teeth, clutching shoulders. An ad ♀ (pregnant?) to top tree B, where 3-4 others crowded around her, prob. to groom. / ^{with} ♀ & juv. to tree B' (S. of B), & soon others came over, but scar ♂ stayed high in tree B (control or leader ♂?). When ♂ juv. to tree B', to an adult ♂, & was groomed. Later, leaving tree B' for B, ♀ (Pg.?) first, then ♀ followed closely by juv. ♀, then others, until only an ad. ♂ & a juv. in tree B'. The mother w. inf. stayed fairly long. End of obs. Overcast but bright; calm.

12 October 1965. Last eve after rain, sev'l in tree A ^{near} Pritham Rd; this morning 1 ad + in this tree. Girls saw 10 or +, 3 or + juvs., to #. of .1 on Prith. Rd.; probably the 13₁ ^{sp.}. They also 2 ad. ♂♂ near 1.1 E. And at 1.5 E, "stump tailed" ♂ alone in tree. / Rain midday. 1530, stratus, occas. sprinkle. I walked S. on road. Tree A ^{near} Pr. Rd., sev'l in tree A (Celtis), doubtless the scar brow ♂ gp. At 1.55 E, I saw "stump tail" ♂ ^{same 1/2 hr. later} alone on 30' high dead branch; resting. To 2.1 + back N., & at 1.6 W. saw 9 or 10 (2 juvs.), rather wary gp. (the 1.4 W. gp?). There in Celtis, & started to flee when I stood 50 yds. from tree in open.

Treehouse obs. - hd. A.

Prox for census

Colobus abyssinicus12 October 1965.Kibale Forest, Toro Uganda

Back at Bridham Rd. 0.15, 4 ads. about 200 yds. N; feeding in ² trees (terminal Marlebamia lvs. ?); where ^{10±} seen in morning. In tree B, sev'l, including "scar brow" ♂ - the usual ♀. One juv. (1 yr?) had 2 cm. white spot on chest (sternum). A subad. ♂ wrestled w. a juv. (2 yrs.?), grabbing shoulders, mouths open. Ad. ♀ to the subad. ♂ soon, & ♂ gr. ♀. This at 1810, before sunset. Appar. pregn. ♀ gr. other ♀ ad. 1818, gurgling calls to E. of road near 0.10 E.

13 October 1965. Several calls heard early, about 0645. Later Rolt walked to ^{area} 1.65 W. & saw grs. of ♀ (same as last time?).

Two ad. ♂♂ near, & ♂ and another ad. of grs. shared the 2 off.

18 October 1965. Kapwata, N. side Mt. Elgon, Uganda
(on Siti River)

A forested slope of 1000⁺ acres about 1 mile S. of rest house. Slope of N. aspect. In evening heard calls from at least 2 places here. Climbed to "fire tower" in upper part of softwood plantation - a 100' rock w. shelter atop. Good lookout spot for treetop monkeys. About 1730 saw 1, & eventually 4 ads. including one w. 1/2 tail missing, in broadleaf trees against the ^{foot of} E. face of the rock. White hair of back longer than at Ft. Portal; probably tail too - for I saw one man w. white tail tip on stick or fly whisk, and another one near Burnasifuwa (17th.) If possession permitted, how prevent killing? Rain night.


19 October 1965. Heard one early. Later rain, rain.

In occasional lifts clouds surveyed forest slopes and saw grs. of 7, 3, 4 at dist. about 1 mile, in tops green trees (one dead), all ^{grs} 200⁺ yds. apart,

Colobus abyssinicus19 October 1965.

Kapkwata, NE ^{side} Mt. Elgon, Uganda
 about 300 to 600' above level Sita River, about 1/2 mile
 in from forest edge. But I saw one adult feeding
 atop tree 70 yds. from road, 1/4 mile NW of rest house,
 within 1/4 mile edge ^{native} village. | Some lumpy rain noon,
 but clouds descended again. } ~~Rain at night~~

20 October 1965.

Rain ^{nearly} all day. About 4 p.m., after rain stopped,
 went to top of fire tower (150' rock overlooking forest). At base of the
 rock, saw 4 (1 juv), incl. "stump tail." Two climbed several
 yards up rough rock cliff face. They ate leaves of compound
 leaved tree w. tip leaves red, very small (). Trees about 80';
 about 1/2 height of cliffs. | Two ads. in 80' green trees ^{shape} at edge
 forest to W. of tower. And below + SW of tower, where 1 1/2' diam.
 cypress tree at forest edge, 2 juvs., + 2 or 3 ads., 2 or 3 being on
 dead old fallen logs in the herbaceous tangle, 50' from forest
 edge (not just a forest crown heart). In alarm, these climbed up
 into cypress tree. | Visibility good, but I discovered none in
 binocular sweeps of about 2 sq. mi. of forest to S + W. More atop
 trees in mornings? No rain evening.

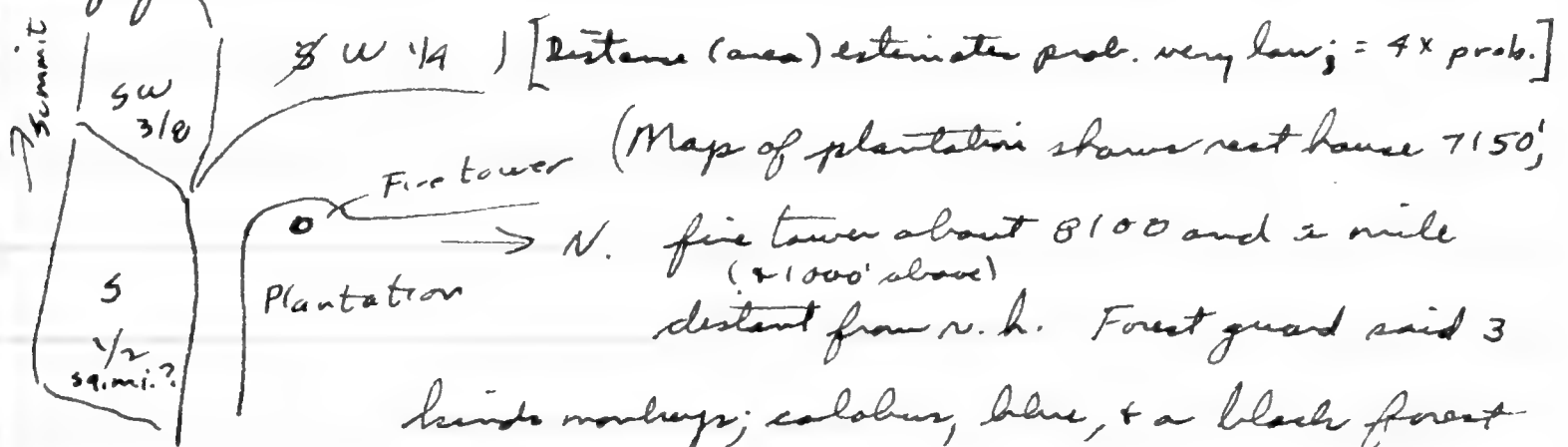
20 October 1965.

No rain night, but overcast morning. Heard calls
 to S. of rest house. On slopes to S. I saw 3 (1 juv). Walked to top of fire
 tower (arrived 0930); cloud bottom 100' above. | To SSE at edge
 forest ^{the near} (edge plantation), 6 (2 juvs.), 3 being in low tangled vgr. about
 10' high, 20 yds. from forest edge, + 2 ads. in tree at edge. (3 seen
 same area last evening.) I swept forested slopes with telescope.

Saw 9 in gp. on near side road, near Sita River; many recounts nec-
 essary before seeing full number. Also, to SSW, nr. side river, 1 adult

Colobus abyssinicus20 October 19657000'
Kapwata, NE Mt. Elgon, Uganda

atopie in forest. In soil success of N. aspect ^{solid} forested slope to S., saw gpr. of 1, 3, 3, 1, 1. / 1050, swept slopes to W. ~~At~~ + saw gp. 100' below crest to WNW, 8 in crown one mod. tree. 200+ yds. down slope, 1 (W SW). / Brightened about noon; ceiling 500+ ft. above tower. The close gpr. to S. had 4 ad., juv 1, juv 2, and white infant. Rather all white, climbed on shoulder "mother". The juvs. wrestled playfully, 50' below others. Two ads. ^(1 gr. other) groomed, using teeth + fingers. About 300 yds. upslope from there, also at ^{near} forest edge, 4 or 5 (when seen last eve) by cypresses, 2 ads. on dead snag on ground (photo). / Looking down over edge rock, saw 2 ads. including "stump tail". He ate the red terminal leaves (small) of comp. lvd. tree. About a dozen trees along base of this cliff, + monkeys can go from one crown to another, apparently, + occasionally onto rock face. Imitated calls bring' quick looks toward us (up). Sprinkles; left about 1330. /



monkeys which eats corn. / Returned to tower about 5 p.m., but drizzly. Saw 5 in area n. river where 9 this morning.

21 October 1965. Overcast 7-9/10 morning. I walked to tower; arr.1400. Walked forest trail 1 hr. but saw none. Atop ^{Tower} ~~tower~~ 3 p.m.

Occas. light showers. About 100 yds. SW of where 9 yesterday noon,

300 yds. NW of near side road on Ititi River, 6 in top bushy tree. In

area betw. river + plantation, to S. tower, saw 2 singles, + heard

Colobus abyssinicus

21 October 1965.

Kapkwata, NE Mt. Elgon, 7000', Sebci, Uganda

C. mitis. ^{By 1630} I made long overlapping telescope sweeps across slopes 1-2 miles away to S, SW, W, + saw only 2 and 1, there in lower 1/4 of slope to S. Occas. sunshine thru clouds. / 1650, 100 yds. SW of tower at edge forest, 1 ad. ♂ 30' up on open branch. White hair hangs well below level of body when sits. In jump, white hair extends - in "parachute" effect. I heard ^{gurgling} calls, approx. 2 at least 200 yds. apart, in area to S. on near side river.


Kibale Forest, Toro, Uganda.

27 October 1965. Road walking census starting 1500 from Pridham's. P.R. 0.1 N., ^{incl.} 3 ad. ♂, 1 juv. 1 in Olea, most in bare top.

One of "srag tooth" w. scar over eye. The 13 formerly in tree A[†] apparently, + not seen for in October. / Near foot Prid. Rd., 5 or + (incl. inf., juv. 2) - part of gp. in tree A early Oct. ? / Summell road 0.7 N, gp 5 or + and 3 ads., 150 yds. apart, in sparse leaved trees, 30-50' up. / 1.4 W, 7 or + (last seen ad ♂, juv. - 3); the usual 1.4 gp. of 8? 1.49 E, 5 ad. + white inf. (ad. ♂ ~); usual 5 Prob. or same tree. / 1.7 ^W, 2 or 3 ads. + 1 C. bodensis. Heard gurgle calls nr. 2.0. / 2.1 E, 5 or + (incl. juv. 1) in thick Celtis (?) trees 100 yds. from road (big gp. seen here at least once before). / 1.53 E, 2 ad. ♂ or 5 yds. apart in tree; 1 = "stamp tail" (crown ~), other crown ~. There 2 80 yds. from ad. ♂ of gp. of 5 at 1.5 E. Latter gp. in juv. 1 + white infant. 1.4 W, 8 (2 juv. 3), 6 being in single bushy tree within 30' distance, + 2 about 30 yds. distant. 1:2 W, 1740, 4 ads. (incl. ♀), + 50 yds. N. ad. w. black inf. 1.1 W, 7 (incl. black inf.), one 50 yds. from others. / Pridham Road, 1745, 0.1 N., 11 (2 ad. ♂, 1 juv. - 1). Eat ^{distal} Celtis leaves.

Colobus abyssinicus27 October 1965.Kibale Forest, Toro, Uganda

None in trees A, B, C. Rain hard at night.

28 October 1965. Several calls from different directions heard from Pridham house at 0630, when cocker crowing + barely light enough to read outside. Same other mornings, more than at any other time of day. Sound or start rain does not start calls (as in howlers).1555, Prid. Rd. 0.12 N. in Olea, 6 + including "snagtooth" ♂.Highest in tree a subad. ♂ w. anterior crown silhouette .1610, Sammill Road 0.5 E., 4 ad + 2 juvs (^{est.} 1 + 2 yrs.) in taller trees, sparse foliage, on w. twig new leaves (Celtis?). Incl.

3 large ♂♂, which fed in fine leaved top after others descended. Slow driving (5 mph) S on road; saw none until

1.5 E, where "stump tail" ♂ alone. 2.05 E., 2 ads. in Celtis,

but not see "hink tail." Overcast, but drier & less threatening than yesterday; light breeze - and fewer monkeys seen! about

1730, 4 or + in Celtis on Prid. Rd. 1.5 N. (snagtooth gp.?).

Then in forest 1/4 mile E. of Pridham's house, 6 (1 juv. 2) rapidly eating foliage (tree 300+ yds from tree "A"). Heavy rain night.

29 October 1965. Low stratus. ⁰⁸¹⁵ Sp. of 9± near start of Chimp Path, to N. P.R. 0.1 N., one adult (snagtooth gp. not seen). WalkedS. 0830, 1.27 W., one ad. in top dead liq Balanite. Calm, overcast; many flies; few monkeys out. Saw ^{none} ~~none~~ liq 1.7, &walked back N. 10455, gp. still near N corner of tea estate, but counted only 8 (3 juvs., 1 to 3 yrs.) in one spindly Olea


top, 80' tall. Mod. foliage. Bartender ♂ highest (only ad. ♂?).

One juv. = ♂. Occas. one pick or chew picked leaf, but little feed.

Juvs. espec. active; move about; grab, wrestle, mouth each

C. 15
a Colob

Colobus abyssinicus29 October 1965Kibale Forest, Toro, Uganda

other. Ad. gr. adult. ad. gr. juv. One white inf., closely held but sometimes sat 1 ft. from ad. Pink face, black ears. 1023, 2 juvs. descended tree; rest stayed. 1033 still inactive. One clump of adult + 2 large juvs. x Perhaps one subad. Only 4 definite adults. No others approached or handled white inf. by 1040. Brightening but overcast. 1650, to area Pridham's N. corner. Near start Chimp Path, 5+ juv. - 1 in new foliated Celtis (?) at edge forest, 20-30' up. 100 yds. NE of there, 7 or + at forest edge, 12-30' up. A third group, 8 or + (incl. 2 juvs). One ad. in tree betw. 2 gps., possibly or having chased ^{second} ~~second~~ gp. to NE. Walked S. on road. 1720, 1.3W, 5 or + 50' up in mod. foliated (the 8 formerly at 1.4W?) 1.3W, 1 adult, eating Moribania leaves. 1.7W, 4 in & n. dead tree. ♂, flesh penis erect, rushed to high branch as if in threat → me; 1 C. bodius within 50' of gp. Alarm of gps. at about 100 yds. usually. No more seen by 2:1 on road; sunbime still (1750). Back at 1.7W, ad. ♂ . 1840, 1/4 mi. E. Prid. House, 2 in thin top tall tree (Celtis?) and also black & white hornbill perched within ^{50'}.
30 October 1965, Rain 9 to 3 pm. 1600, alt. stratus. Chimp Corner, ⁴/₂ or + (incl. juv. 3), 40' up, w. red tail 20' below in same tree. and 50 yds. NE of there, 3 ad. + juv. 1 in Moribania. Ad. ♂ with tail tip 'S', visible thru thin white hair x esp. apparently: ~~at~~ ^{+ 100' + 80'} ♂, 3 ad. ♀, juv. 3, juv. 1, = 6. Flesh penis of ♂ protruded; display? as I to 50 yds. from tree, they hurried thru tree tops to denser trees. Saw second ♂, carried ^(?) black inf.; possibly the 2 gps. had joined, or gp. = 8 (2 ♂, 3 ♀, juv 3, juv 1, inf.). The ad ♂ S-tail close to ♀; then moved lost to NW., she 10 sec. after him & again sat close (6'). In crown 80' tree, there 2

Colobus abyssinicus

30 October 1965.

Kibale Forest, Toro, Uganda.

stayed while I walked beneath a trail. They must often see the ¹⁶³⁰sectors +
wood gatherers here. P.R. 0.2 N. 100 yds., 11 out in one ^{70'}Marlebamia,
feeding; no flowers. ad. ♂, ad. ♂, juv. 2, juv. 3, juv. 3, + others.
Eat orange-brown distal leaves. 7 in 10 yds. down. Mod. thin foliage.
(Later saw 2 turacos feeding top this tree.) / 1.15 W., 5 ad. (1 ♂) + juv. 1 in
50' Celtis; ate leaves; mod. foliaged. Juv. ran to chest of ad. / 1.2 W.,
dead Balanites area, 6 or + incl. juv. 2 (the 1.4 W gp. of 8?). 1.5 1.9 W.,
gurgling la-sol calls of 1. No more seen by 2.1; walked back to N.
1810, calls from 1.15 W. area where 6 ads., 3 being in top single
Marlebamia. The P.R. 0.2 N gp. 50 yds. N. former spot, in thick
foliaged Celtis.

FCW
out!

1 November 1965. Fog; then alto stratus; rain 1100. Slow drive S.

from 0.1 at 1530, but walking S. fr. 1.3, yet saw none until 2.1 E.
then 6 (incl. juv. 2) in tiny new-leaved Celtis top, 30' tall; alarm +
most flee at 60 yds. (1 big ad. stayed). None seen on way back to P.R. house.

2 November 1965. Sawmill Rd. 0.85 W., 8 (incl. juv. 3, ad. ♂) ^{juv. 2,}
near road at edge ^{sprawling} gp. 40 ± C. boduio. / In addition, 1120, 0.75
N., 4 ^{out} (incl. bl. inf., juv. 3). Two more 150 yds. E. of den, so 3
gps. in view from one spot. also saw redtails, ² blue, same time.
Yet another 0.9 E., stop only 1 flers tree. / about 1215, the 2 m.
0.7 N climbed down into lower denser veg. + sat together on
limb; another ad. came from W. + sat 20 yds. short of them,
but no apparent alarms or threats. / 1250, 0.52 W., one
ad. 25' up; ♂; thin new foliage, prob. Celtis. And 50 yds. S, 2
under canopy in 40' tree, ♀ + prob. ♂ ads. Much alarm when I
walked near (on road, 100'). The 0.7 N gp. of 3? / 1620, 0.9 E. 300
yds., 2 ad. + juv. 2. 6/10 alto cu. + series. 0.75 N., 4 (same?)

Colobus abyssinicus2 November 1965.Kibale Forest, Toro, Uganda

0.85 W., 5 (same as earlier 6 prob.) at edge C. bodini gp. / Walked S. + saw none until 1.75 W., where adult ate Markhamia flowers buds. Alarmed, it bounded up + toward me 20± yds, to 40 yds, ^{half} + faced me, penis showing. Then bounded 50' away into thicker foliage. 1830, 4 ad. 2 juv (1+2) in new leaved tree edge forest + tea field, 100 yds SW of Chemps Corner. Tree 25' high; I saw gp. there a few days ago. Tree half height of adjacent (Olea?).

3 November 1965. About 0830, 0.6 E., 2 (one ♀) in tree tops. One crooked, but not one closest to observers. / 0.5 W., 7^{to 10} (juv 2+3) in Olea (?) tree. 2 C. bodini within 50'. One in same Markhamia where C. bodini a few min. before. 2 ate Markhamia while C. bodini sat 10' distant. A juv-2, near an adult, poked paw toward a small C. bodini which ran close (2') past. 4 fed at once in small Markhamia tree. / 0.23 E. (=K-6 again), 8+ juv. 1 resting in tree, where seen early Sept. Redtail in same tree as 2. Most trees, or all, Markhamia + Celtis. Still here 1025. Drove S. / 1030, 2.02 E., 8 ^{to 10} + 8 ^{to 10} incl. juv 1, juv 2-3, 2 ♂♂ ad., in mod foliaged Celtis. 2 redtails within 100'. The 2.1 E. gp.?. / 1109 turned to N., driving. 1.75 W., 5 or + scrambled in alarm, at least 2 redtails + 2 blue scrambling with them. / About 1720, 1.28 W., 6 (1 juv-2). 2.05 E., red-gp. seen earlier prob. 1.27 W., 6 again. / 1805, none along Pridham's NW border. / 1

4 November 1965. Foggy; then sunshiny. 0.5 W., 9 (incl. juv. 3, juv 2, ad. inf.), at least 2 ad. ♂♂. ♂ faced us as if threatening, head somewhat lowered, forelegs far apart; moves quick, not languid - threat prob. / 1.9 W., "hink tail" gp. of 5 (2 ♂, 3 ♀), one ♀ w. white inf. (pink chin, black ears). Second ♂ 50 yds. sep.; crown; sat placidly

Colobus abyssinicus4 November 1965Kibale Forest, Toró Uganda.

80' up (photoed) tho we stood 10 yds. from base tree & even threw stones toward him. ♀ w. inf. jumped ^{up} inconvenience. Rather tame group; all remained within 50 yds. of us on road in open. / Drove to 5.5 but saw no more. 1737, P.R. 0.15 N., 200 yds., 2 ad. in Maribania (where ^{9p.} seen a few days ago). None seen in walk to 2.1 and back, until 3 or 4 seen 1.27 W. at 100+ yds.

Kibale Forest, Hima Block

5 November 1965. Mr. Rutherford showed me Eucalyptus selagine (sp.?) grove 3 1/2 yrs old, trees 8' apart, adjacent to edge forest (Hima block, N. of F.T.P. - Kampala rd.), where colobus said to strip bark & kill trees. Trees 5-6" diam, ^{25'-35'} ~~20-30'~~ tall. Damaged for 7 rows back from edge. Dry branches all broken from holes. Bark has tooth ^{gouges} gouges, & some short strips bark torn off. More torn off in short (vertical) sections all up trunks and top 5' & dead & barkless. R. said these largest trees attacked. In other area trees badly damaged were cut, & then sprouted from stumps. Big forest trees to 70' nearly touching eucalypts at edge. We saw 2 C. alyps. nearby, tho not in eucalypt. Two trees raised ^{as} firewood for tea factory. Along road to highway saw one juv 3 which stayed 50' ^{dist. (in tree)} while we in car. (R. said occas. chimp in this forest.) / 1700, Chimp Corner area, 6 (2 juv. 3; + white inf.); 2 C. brodiei up 50'; & a blue also near. P.R. 1.5 N 100 yds, 7 or 8 (incl. ♂, 2 ♀, juv. 2 or 3 yrs). ate camp. leaf (Fagara?), but later to Maribania, Celtis area. (Broken cu - statue after midday rain.) / 1.2 W., 6 in Celtis & Alea (incl. juv. 1). Walking S. ^{1.25 W.} ~~1.2 W.~~ Tort, wary; started to flee at 150 yds; 1 ♂ closest to road by 50 yds. / 1.35 W., 2 ad., ♂ & ♀. Took alarm at 100 yds, then stayed as I walked by at 50 yds. 1.95 W., "hind tail" in 9p. 5; croaking. Walked to 2.15 (1010), & S. open. 1835, 1.38 W., 2 ad. about as before.

Colobus abyssinicus5 November 1965.Kibale Forest, Torii Uganda

about 1700, 1.95 W.; "hink tail" gp.; of 2 ♂, 3 ♀, 1 white inf.; 100 yds. from road. about 1800, 1.4 W. 100 yds., 2 ads. (1 blue near).

6 November 1965. Saw sev'l gpos, up to 6 (1 juv.), in 2 hrs. walk along forest road in Nerina Block, N. of F.T.P. - Kampala Highway. One subad. allowed photos at 40', 45° up from me. Forest fewer dead trees & logging, more closed, than in block ^K6 + ^K7. / About 1700, 1.23 W., 6

(incl. 1 juv. - 1) ¹⁰⁰ 120 yds. from road in Celtis. (Still there 1 hr. later.) 3 redtails in vicinity. / 1.93 W. 100 yds.; "hink tail" ♂ gp. of 5 (+ white inf.). One ate Markhamia (20 min.)

flowers; one ate 5-10 mm. long leaves Celtis. Later ate fine lvs. Celtis / 1.0 E. 50 yds., 5 ♂ (1 juv) + white inf., in spindly Celtis w. most upper parts dead. Think whole gp. at slight disturbance 2 lower ascend, so

all in 5 yd. diam. 2 ♀ sat 2' from ad. ♂. Inf. has pink face, pinkish forelegs, dorsal hump, antlers crown. Cat tiny new leaves Celtis. / Across road nearby, 0.95 W., 5 ♂ + (2 juv. 3) in large Markhamia, eating rapidly. / By 1820, the 5 w. white inf. in tree 50 yds. from first, eating avidly at Markhamia foliage. 1842, at edge forest nr. Presb. N. corner tea, 100 yds. SW of Chimpanzee Corner, 8 (2 juv 3) in new leaf Celtis, where sev'l seen on at least 2 previous recent occasions. ^{Eating fast.}

7 November 1965 0930, 0.9 E 50 yds., (within 100 yds. of where 5 + white inf. seen last eve), gp. of 8 (+ held white inf.), resting in nearly

leafless tree. 2 redtails within 50' of members of group. at 1125, gp. in same (1) and 2 adjacent trees, in 100' diameter, quiet. Across road, .95 W., 2 juv. 3, ad. ♂, ad. ♀, & others in 20' Trema near edge

road. Juvs. not flee when I parked car 25 yds. distant. / .75" rain mid-day. Evening census, .93 E 5 (1 juv - 1) + white inf. (200 yds. from where 8 this morning; same gp.?) .93 W., 2 ads. (incl. one ♂). 185 E., 2 ♂ + 1 ♀. 1725, 1.2 W., 6 (1 juv 1) in Celtis. 1.26 E., 2 ads. (1 redtail 50'). 1.95 W., 2 ads. - prob hink tail gp. 1.69 W., 1 ad. (2 there?).

Colobus abyssinicus7 November 1965
(usual C?)Kibale Forest, Toro, Uganda

1.2 w, 5 (incl. 1 black inf.). Then on census walk Prishun house to .9 to 2.15. /

Hugh Howell said colobus in botanical garden, Entebbe.

13 November 1965.

Mr. Moiben (15± mi. S. Kitala), W. Kenya.

Visited Richard Leather, cattle rancher. KRL Hall had told me that colobus were in riverine forest ^{on} Mailen river on Leather's ranch. Leather friendly Englishman; offered housing & other hospitality. He showed us site where Hall observed, about 2 miles from ^{Leather's} house. Riverine forest 40-60', mostly thorn trees, in semi-arid cattle country. Rolling country. Forest belt about 100 yds. wide. He said Hall saw about 4 bands, some of about 14, & stayed in area about 5 days (should have counts in notes). We saw 1 to 4 in about 3 places. White hair long, as on Mt. Elgon, & apparently had parachuting function in "dropping" leaps. Leather thought never left river forest. Forest mod. foliage only, but generally more foliage than where we worked most in Kibale Forest. Much drier here, & tree species different. Some Podocarpus (?), willow, along river. Clear but moonless evening. at 2130, croaking calls from 2 or 3 parts forest.

14 November 1965. More calls in night, & about 0450, when half-moon up, much calling, & coughing grunts of (boboon?) from different areas, as if started by some disturbance (leopard?). C. mitis in same forest. / about 0900, after wind came up, crossed river (to N.), walked 1/2 mile W, crossed to S., & walked back to camp. In last 1/2 mile saw 2 groups, one of 10+ (incl. 3 or 4 juvs.), one of 8± (incl. 1 or 2 juvs.) - saw no carried inf., but one male alarmed at 100 yds. & view poor. Drops of 15-20' straight down, more common than in Kibale gps. White fur very clean & tail tips conspicuous.

Nairobi, Kenya

21 November 1965. Leslie Brown said he once saw in Longonet crater, about 40 mi. from Nairobi, in fig trees near crater floor. I visited

Colobus abyssinicus28 November 1965Nr. Nairobi, Kenya, Africa

crater on Nov. 28. Some patches trees to 40', tho mostly brush on floor & sides. Saw no monkeys. / An infant born in cage at Tigoni primate center (Cynthia Booth). The people there said females can take from mother & handle it (about 2 weeks old; face now black), but males cannot because of hostility of mother.

End

(These supplement species acc'ts. on)
C. abyssinicus & others.

Monkey Censuses walking (+ car)

13 Sept. - first
 23 September 1965.

Kibale Forest, Toro, Uganda

also see
 Cal. dyp.
 notes

Walked 1.1 to 2.1 + (K-8) + return, 0840 to 1030. Calm, overcast.

Saw 0850, 1.2 E, 7 ad. C. dyp. 0900, E., 1 C. mist. 0905, 7 C. ab. + 1.4 W.

0915, 1.5.5 W. 1 C. ab. 0940, turn N. 1005, 1.5.3 W., 2 ad ♂. 1025, 1.25 E.,

5+ C. mist. 1.2 E., 7 ad. still. 1.1 W., 1 C. mist.

24 Sept. Mi. 1.0, 1630. 5/10 cu - nimbus; wind 5 mph. Walked S. 1635,

1.2 E, 6 ad. C. dyp. (1 juv. other). No more to 1.55 W., where 1 blue ad.

Then rain started. Earlier wind prevented hearing most. a seeing branch most.

After rain, clear air, 2/10 cu. + strat. clouds. Start 1.1 at 0550. 1.12,

1 redtail W. 1.2 E, 4 or 5 ad. C. dyp. 1.25 W, 1 ad. C. dyp. 1.3 W,

1 redtail. 1.32 W., 3 blue, 1 redt. (redt. 20' from blue in same

Marlebomia tree). 1.42 W, C. dyp., 6 or 7 incl. 2 juvs, & 1 C. bodin

(see 25 Sept. more census too). (Red C. not 1' from C. dyp., back to

back.). 1.68 W., one ♂ ad. C. l'hoesti (allured approx. to 20

yds. Still there next a.m.). 1.68 W, 2 ad. C. dyp., at least 1 ad ♂,

1.95 E, 5 C. dyp. ad. (1835; next morning saw one ♂ had hunk

in tail. To K-8 sign, 1845; too dark for further good obs.

25 Sept. 1965. 1/10 alto clouds; calm, clear, sunny. Started 0835

mi. 1.0, walking S. 0840, mi. 1.2 E, 5^{out} ad. C. dyp. (as seen be-

fore). 0841, mi. 1.4 W, 5 C. dyp. (1 out juv.). 1.45 W, 5 C. ab.

with 1 ad. C. bodin. (at least 2 C. ab. juvs.; all of same

band?). 0858, mi. 1.68 W, 1 C. l'hoesti ♂. 0903, 1.8 W,

5 blues. 0915, 1.97 E, 5 ad. C. dyp. (near where last seen;

include hunked tail one ♂ ad. 0925, K-8, turn back. / Saw

again gp. 5 ad C. dyp. 1.96 E. (heard other 1/2 mi. SE), 4 or 5

blues 1.8 W, 1 C. l'hoesti at 1.68 W. Lone ♂ ad. C. dyp.

at 1.64 E, 7 (incl. 2 juvs) C. dyp. + 1 C. bodin at 1.6

3 or 4 C. dyp. at 1.23 E. 5+1 juv. C. dyp. at 1.1 W (1040).

C-2

C-3

Kinktail gp

Monkey Censuses walking

25 Sept. 1965 (cont.)
walking.

Kibale Forest, Torq, Uganda

Pr. Rd. .13, 150 yds. N., 9+ inf., incl. 2 ad ♂, 2 or + ad. ♀, 2 or + juvs.

Start 1710, Pridhams road .05, 6' ads. (2♀, 1♂, + ?) + inf. to W.

1712, .95 E, 7 ads. (2♀♀; the 1.2 E gp. prob.) in near bare Cottus

1730, walked S. from 1.1. None at 1.2 except 1 redtail. 1.3 E, 2 redt.

1.48 W, 1 C. bodius, 1 redtail, 4 C. alyps. (1 a juv.); the usual gp. of 7 probably. 1.57 W, 1 C. alyps. 1.55 E, call of 1 blue. 1.97 E,

5 ad. C. alyps, incl. 2 ♂♂ 3♀♀. 2.1 E, 1 blue ad. 1835

reached K-8. On way N. saw 7 or 8 C. alyps. (2 or +♀♀) at 1.47 W.

1900, 1.15 E, 2 ad ♂ (+ others?). Prid. Rd. 05 E, 1 redtail.

27 Sept. 1965. Start 1700, 1.0, in car but stops every .1 mile

(or less if monkey seen). 1.0 W, ¹³ ~~10~~ C. alyps. (p~~ro~~b. = the 13 of band A.)

1.1 E, 3 ads. (prob. the usual 7). 1.0 W, 1 redtail. 1.2 W, 1725, 2

redt. (on thick dead limb). 1.75 E, 1 redt. 2 blue. 1.75 W. 4

blue (one w. small black inf.). 1.95 E, 4 ad. C. alyps. (prob. the

usual 5 ads.). 2.1 E, 4 ad. C. alyps. (probably more near). Back

to 1.68, none found! - (no rain this afternoon; more active

after rain?). Back to 1.37 E, 5 (1 juv) C. alyps. 1.5 W, 1 blue.

1.35 E, 1 C. bodius (rarely alone?). 1.3 E, 1 redtail. 1.13 E,

5 ads. / Car. 1735, Pridh. Rd. .1, 13 gp. 1.15 W, 7 C. bod-

ius (+ 2 inf.). 1.2 E, 4 ad. C. alyps. (prob. the 5 ads.). 1.2 W,

7 C. alyps (4♀, 1 inf., + ?). 1.35 E, 4 ad. C. alyps. + 1 inf.

1.42 W, 3 redt. 1.7 W, 2 ♂♂ C. alyps (+ one?). 1.95 E,

5 ad. C. alyps. (incl. limb tailed ♂). 2.2 E, 5 ad. C.

~~C. bodius~~ ^{O.K.} alyps + inf. Back to 1.85 E, 5 (incl. juv. 1) + inf. C. alyps (?)

1.63 W, 1 blue (1850).

see Col. ab. notes → 28 Sept. -

29 Sept. 1965. Car; casual census, 1.1 and 5. 1645, 1.3 W,

1 ad. C. alyps. ^{alone} in ~~the~~ Mark 1.25 W, 5 ad. (1 juv) or + C. bodius

Monkey Censuses

no census

Census
in progress

29 September 1965. (cont.) Kibale Forest, Tong Uganda
1.72 W., 3 blue + redtails. 1.95 E., usual 5 ads. To K-8
(2.2) + back to N. 1.7 E., 3 ad. C. alyps. 1.68 E., 6 \pm blues +
3 or + redt. (commonly seen here). 1.25 E., 1 redtail. 1.2 E.,
7 ad. C. alyps. On N. to 0.4 W., 6 ad. + gray-backed inf.
K-6 (0.3) none seen.

C. 9.

30 September 1965. 1650, 7 ad. C. alyps. 1.1 E. 1.15 W., 2 redt.
[0.4 W., 7 ad. C. alyps (+inf.) + 1 C. bodinus.] 1.25 E., 2 C. bodinus. 1.3 W.,
10 \pm CB (mil. juv. + inf.). 1.3 E.; 4 ad. (2 α + 2 β) + inf. C. alyps; 3 C. bodinus
seps. (gp. seen 1.15 W. a day or 2 ago?). 1.35 W., 1 C. ab. ad. alone. 1.5 W.,
5 blues. 1.55 E., 3 or + blues (1 juv.) + 3 or + C. mist. 1.6 E., redt. 1.6 W.,
redt. 1.6 E., juv. redtail. 1.65 W., 1 blue; 1 redt. 1.68 E., 1 blue.
1.8 E., 1 juv. redt. 1.95 E., 5 ad. C. alyps. To K-8 + back. Walking
census. The 13 C. alyps apparently still near 1.0 W. No rain; broken
clouds evening. / about 1800, 2 or 3, thru trees fairly fast, 40'
sup, from S. to N.

Kagera Rd.
→

Census

6 October 1965. Eve. Slow car travel w. stops. About 1700 to
1840. 0.3, 7 CA to E. 0.4, 7 CA (+inf) to W., + 4 ad. CA.
Pr. Rd. .2 S., 9 (+inf.) CA. 1.55 W., 6 blues + 1 mangabey.
1.56 W., 3 blues. 1.55 W., 6 redt. scattered; + 2 CA or 3.
1.68 W., 7 or + redt. (one juv.). 1.8 E., 2 blues / 1.5 E., one
ad. or CA (stump-tail). 1.4 E, 5 (1 juv.). 1.4 W, 7 (2 juv.).
1.3 E, 2 redtails. No rain late p.m.

Same obs. To K-8 + return to 1.1.

7 October 1965. Kibale Forest, car, eve. 1555, Pr. Rd. .2, 9 + inf.
C. ab. 1700, 0.6 W, 10 \pm + inf. C. alyps. 1.35 W., 10 \pm C. bodinus. 1.35 E.,
4 ad. + juv. 1 C. alyps. 1750, 1.55 W., 1 redt., 1 blue. 1.75 W., 1 ad. C. ab.
1.95 W., 4 ad. C. ab. 2.0 E., 1 redt. 2.1 E., 1 blue. 1.35 E., 3 \pm redt.

C 11

Monkey Censuses

8 October 1965

Kibale Forest, Toro, Uganda

Can, eve. None K-C or O.4. ¹⁷²⁹~~1710~~ Prid. Rd. 2, tree A", gp. C. Ab.,
 prob. the 9. 1745, 1.36 W., 12 ± C. hodurs. 1.36 E., 4 ad. + juv. C. ab.
 1.45 E., 9 C. alyps. (² white inf.) + ^{inf.} C. ab.; stump tail gp. also 1 C. hodurs,
 1 redt. 1815, 1.55 W., 7 or + C. ab. + 3 or + blues. 2.1 W., heard
 blue. 1.85 E., 2 blues. 1.85 W., 4 redtails. End 1850. Field man,
 no showers.

10 October 1965. Kanyawara area, .3 to 1.4 mi. from ranger house,
 post rain, start S. end, walk N. 1706, 6 or + redtails, 2 blues. 1714, 7+ (prob.
 10+) ^(2 juv.) red colobus. 1730, 1 C. alyps. 1745, 3+ C. alyps. (1 juv.), 1 blue.
 1750, arrived N. end, started S. 1803, 7 or + C. alyps. (where saw before).
 1820, red colobus gp. (same area as before). 1830, 8 ± C. alyps; separately,
 3 blues. Rain. Trees dense, tall; foliage dense; usually see only 50
 yds.

27 October 1965. Kibale Forest. 1500 - 1815, overcast + threatening.

Prid. Rd. 0.1 N, ^{C. Ab.} 9 in ~~0.1 N~~ 11 (smagtooth gp.; = 13?). PR 0.5 W.,
 5+ (incl. inf., juv. 2). [Savannah road 0.7 N., 5 or + C. alyps, +
 3 150 yds. N (1.65).] Walked S. 1.4 W., 7 or 8 C. ab. (incl. juv. 3).
 1.49 E., 5 ad. + white inf. (usual 5?). 1.68 E., ^{or} 7 redtails (no info.)
 1.7 W., heard blue (1610). 1.8 E., 2 blue. 1.9 W., 1 blue. 2.0 W.,
 2 blue. N. 2.1 E. heard 1 blue. 2.05 W., 1 redtail. 2.1 E., 5 or +
C. ab. incl. juv. 1. 1643, turned N. + walked to Pridhams. 2.05 W.,
 1 redtail. (Noisy truck passed to N; alarmed many?) 1.53 E., 2 ad or
C. ab., 1 = stump tail. 1.5 E., 5 ^{ad} C. ab. (incl. juv. 1 and white inf.)
 1.4 W., 8 C. ab. (2 juv. - 3. 1.25 W., 1 red colobus. 1.2 W.,
 1740, 4 ad. C. ab. (1 inf. or j - 1). 1.1 W., 7 C. ab. (1 inf.). (Up Prid. Rd.
 1745.) PR 0.1 N., 11 (juv. 1). NE corner tea, 1 blue. W. side
 tea, 6 + C. hodurs.

C12

out
C13back
C14

Monkey Censuses

28 October 1965

Kibale Forest, Toro, Uganda

Sammill Road, 0.3 to 2.1. C. ludius, 10 or + (2 y. inf., 2 juv.) on Chimp Path. C. ab., 2 to W. of 0.8. 6+ m. P.R. 0.2 N. 0.5 E, C. bl., 4 ad. + 2 juv. (1+2). .45 W., redtails, 2 alone. 1.5 E, 1 or alone, C. ab. 2.05 E, C. ab., 2 ad. (2.1, 1615, turn to N; occas. sunshine. Driving 5 mph W. stops every .1-.2 mi.) P.R. 1.5 N, 100 yds., 4 or +. None NW edge tea field. 1/4 mi. E. Prith. house, 6 (1 juv. 2), C. ab.

29 October 1965. ^{Morning.} Heavy rain last night; stratus, calm. Walked to 1.7 + back. 3 C. ab. (3 juv., 1 inf.) Chimp Path. 1 C. ab. ad., P.R. 2 N. 1 C. ab. 1.27 W. 1 blue 1.6 W. Walking, w. Carla + Kristi. Why so few out? ^{C. ab.} Evening. 1650, sunshine. Prith. N. corner, gss. 6 (incl. juv. 1), 7 or +, 8 or + (incl. 2 juv.). 1710, Samm. Rd. 1.1 W., 1 redt. 1.3 W, 5 or + (0?) C. ab. 1.3 W, 1 ad. C. ab. 1.7 W, 4 C. ab. + 1 C. ludius. 1750, 2.1, turn N. - walking. 1.7 W., ad. or . 1840, 1/4 mi. E. Prith. house, 2 ad. C. ab.

30 October 1965. ^{Rain midday.} Walking. 1600, Chimp Corner, at least 8 C. ab. (possibly 2 gss.); 1 redtail. P.R. 0.2 N., 11 or + (3 juv.), 1630, C. ab. Walked S. on main road, 1.1 at 1640. 1.15 W., 5 or + (juv. 1). 1.2 W., 6 or + (juv. 2). (9/10 ad. to stratus.). 1.53 W., 4 redt. 1.54 E, 1 redt. 1.55 W., 1 blue; 1 redt. 1.9 W., calls 1 C. ab., 1 blue. 2.1 W., 3 blues. Back N. 1810, 1.15 W., 6 ads. + inf. ^{black (or j-1)} C. ab. where earlier. Gp., m. P.R. 0.2 N.

1 November 1965. Sunday. Overcast; rain 11 a.m. 3-5:30 p.m., rain + walking monkey census. (Many Markhamia now have long pods; few flowers now.) Slow drive starting 0.1, going S. 1540, 1.2 W., 2 blue, 3 single redt. 1.3 E, 4 blue. (occas. sunshine). 1.33 E, 1 redt.

Monkey Census

1 November 1965.

Kibale Forest, Torii Uganda

Walked S. 1.6 W., blue call. 1.7 W., 1 blue. 1.9 E., 3 rest. 2.1 E., 6 C. ab. (1 juv. 2). 1650, turned N. - no additional seen on way to house (1725 arr.)

2 November 1965. Walk. Start 0.8 at 1620. 0.85 W., 6 or + C. bodius. 0.9 E., 2 ad. 1 juv. C. alys. (6/10 alto str. + cirrus). 0.9 E., 2 blue 15' up. (occas. sunshine). 1.75 N., 2 ad. C. ab. .85 W., 5 C. ab. 0.77, ¹²10 or + C. bodius (part of spread gp. 40± apparently). Walked S. 1.75 W., ad. or C. alys alone. 2.0 W., 1 blue call. 2.15 W., 2 blues. 1730, turned back N. 2.05 E., 10 or + rest. 1.55 E., 1 rest. 1815, 0.8 W., 1 rest. (+ 3± crabs). 1830, P.R. 0.2 N., 1 rest. 6 C. alys (2 juvs) N. corner tea field.

4 November 1965. Fog, then sunshine; overcast afternoon. No rain. 1730, walked to 2.1 and back to Pritham's. P.R. 1.5 N., 2 ad. ^{or}C. ab. 1.96 E., 3 blues. 1815, 2.15, turn N. 1.27 W., 3 or + C. ab. why so few out? Census of C.B.K alone.

Journal 5 November 1965. Visited Hima Block of forest, + saw Eucalyptus ^{said} damaged by colulus (alys). Eve road census. Rain midday.

5 November 1965 Visited Ft. Portal. Spent 1 1/2 hrs. with ranger at Selutale, Protasio Muryanja (here < 1 yr.). He said blocks 6 + 7 (boundary at K-7 sign nr. 0.83) cut about 6 yrs. ago, sprayed about one year ago. He said Olea ^{melitichi} most common this area, also Strombosia. But Neutonia most in reproduction, + Strombosia prod. second. Olea + Pygeum colonizers. Few Parinari (dense foliage of small dark leaves). Paired sp. include Celtis, Ficus, Balanites, Marsippos (if from road), Craton megal., others. All over 12" girth. (I saw some large Parinari dead, killed because poor form.) Fagaria fairly common (big comp. lf.), but I have not seen monkeys eat (speng).!

Evening walking census. Rain midday.

E. J.
Irford, E. B.

catalogue

1970 # 11-32

...
...
...
...
...
...

Specimen history

1970

13 July

1 mi. SW Limburg, Dale P. Co., Ga. 1500 ft.
Ami 5000 ft. (base); 1500 ft. (top)

23

offy 5-15 m. 21 - 100 - 100 - 100 - 100
Under rock under 100 ft. (base); 1500 ft. (top)

14 July

24

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

15 July

25

15 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

15 July

26

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

27

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

28

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

Small only

29

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

Small only

30

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

Small only

31

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

25 July

32

13 mi. ESE Limburg, Dale P. Co., Ga. 1500 ft. (base); 1500 ft. (top)
Ami 5000 ft. (base); 1500 ft. (top)
Under rock under 100 ft. (base); 1500 ft. (top)

MUSEUM OF
VERTEBRATE ZOOLOGY
REPRINT LIBRARY

